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No. 11



TESTING JUMBO TRIPLE COMBINATION MOTOR PUMP.

HARTFORD FIRE DEPARTMENT

**About Forty Per Cent Motorized—Drill School for Firemen—Best Times Made on Each Exercise at Drill Tower
—Building Inspection—Mutual Aid Plans With Nearby Towns.**

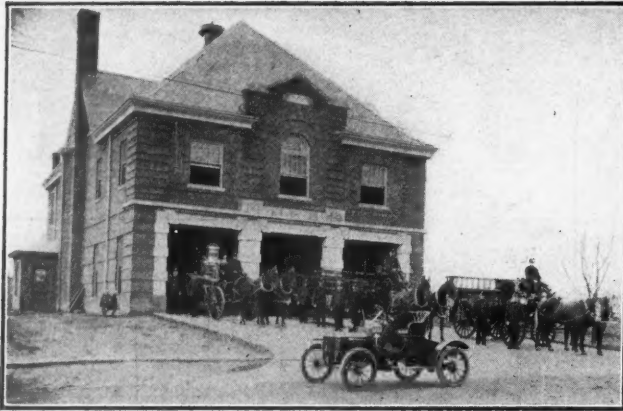
Although complete motorization of the Hartford, Conn., Fire Department has been urged for some time, there are at present only eighteen motor-driven pieces in the department. These include an American-La France 75-foot aerial truck drawn by a La France 4-wheel gas-electric tractor, a similar truck with an 85-foot ladder with similar tractor, one type 15 La France pumping engine, one type 12 La France pumping engine, one American-British gas-electric tractor for steam fire engine, one automobile chemical engine, five automobile combinations, and seven runabouts and practice cars. Other equipment includes fourteen engines, three trucks, one aerial, three combination chemicals and four hose wagons. There are 7,683 feet of spare hose on hand and 26,620 feet in use, of which 6,450 feet were purchased during 1913. There are fifteen fire stations, all of modern construction. At present, the department owns 50 horses.

The personnel of the department consists of chief John C. Moran, deputy chiefs D. J. Dahill and M. T. Keena and 154 men, who are on continuous duty. Each

member is allowed one day in ten off duty and ten days' vacation on full pay.

Building inspection work, with fire prevention as one of the main objects, has been carried on by members of the regular uniformed force as thoroughly as other work permitted. A new form of inspection card has been adopted, one copy of the report on which is turned in to the chief and a duplicate is kept on file in the company station. Bad conditions, wherever found, have been called to the attention of the owner or tenant and steps taken to have them remedied. Last fall, deputy chief Dahill spent two weeks on duty in the Boston department, studying that city's fire prevention and mutual aid systems.

A plan for mutual aid among adjoining localities has been entered into and Hartford made the central point of a district bounded roughly by the Massachusetts line on the north, Rockville on the east and Middletown and Southington on the south and west. At a meeting of the representatives from the cities and towns lying within this district, a recommendation was made that



ENGINE HOUSE NO. 14.



TRACTOR DRAWN ENGINE IN A BLIZZARD.

when any of these purchase apparatus, it secure equipment which could render assistance to any of the other places. Tentative plans now under discussion involve the purchase by the district of apparatus to be located in one of the Hartford houses and used by the city without cost in return for furnishing service in the district. The extension of the city fire alarm wires into the district in underground conduits and the joint use of boxes on the city line is part of the plan under consideration.

A Gamewell fire alarm system using underground wires, which was installed a few years ago, was last year changed to a quick-time alarm system. A considerable saving in time has resulted, especially with the use of motor apparatus.

The use of motor apparatus has greatly reduced the annual cost of upkeep. The expense for maintenance for one year of a tractor-drawn steam fire engine and a motor-driven hose wagon amounted to only \$306.25, while the upkeep for the same time of a three-horse-drawn steam fire engine and a two-horse-drawn hose wagon was \$1,065.05.

Heavy snow on February 14, 1914, added to by subsequent storms, made use of the auto hose wagons so difficult and subjected them to such severe strains that all motor apparatus was taken out of commission for three weeks except Squad A, truck No. 1 and the four chiefs' cars, light wagons or sleds being substituted for

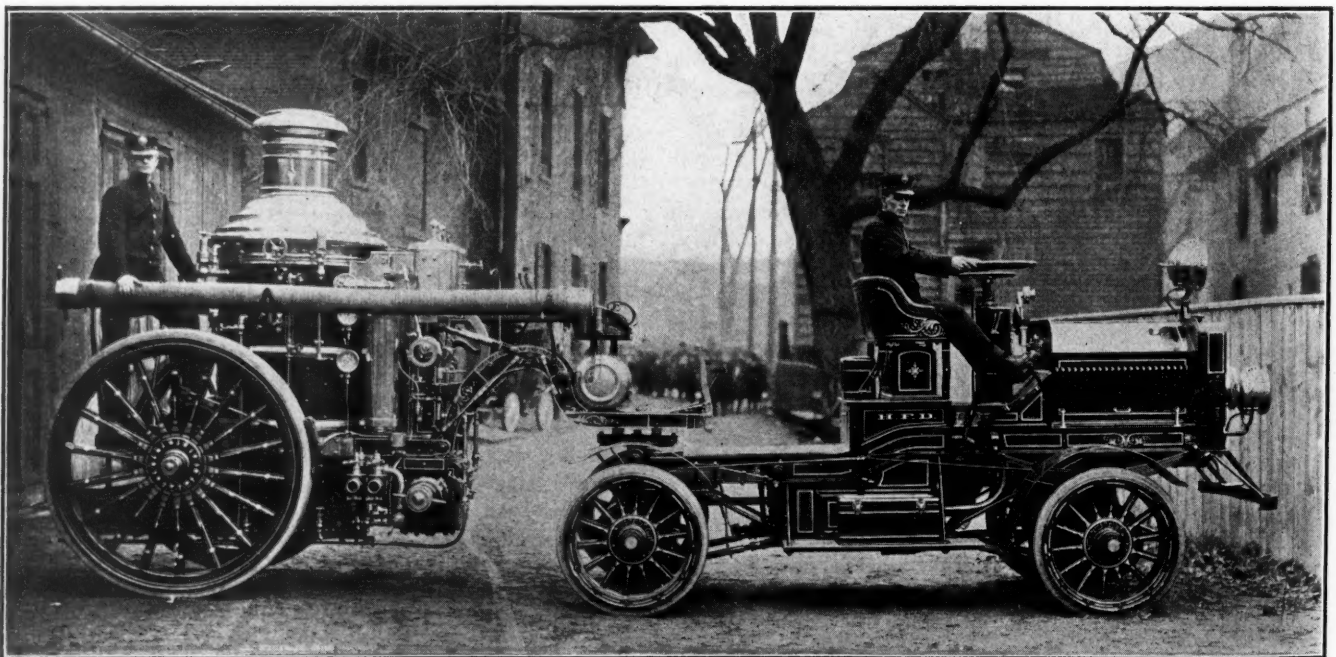
the combination wagons. None of the machines suffered for lack of power, but the universal trouble was lack of traction, the power-driven wheels churning in the snow, in spite of chains, and sometimes tearing the chains entirely off. All of the machines kept in service were outfitted with snow shovels, which had frequently to be used.

A drill school is maintained by the department, courses being given during the summer to the members of the department. The regular course includes exercises with hose and scaling ladders, rescue work and practice with nets and other equipment.

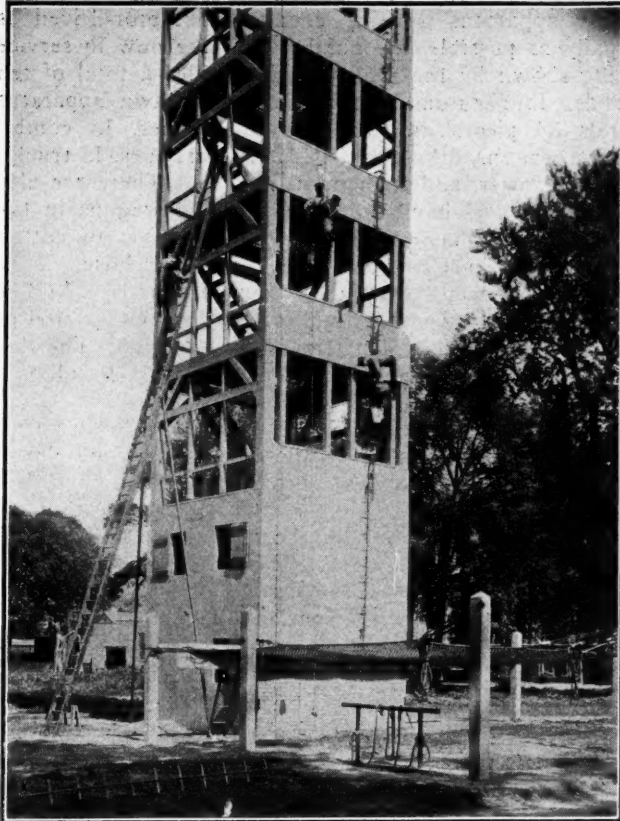
The alarms, fires, losses from fires and insurance on destroyed property last year were as follows:

Fires and Losses from April 1, 1913, to March 31, 1914.

	Box.	Still.	Insurance.	Loss.
April	14	23	\$161,677.00	\$20,585.20
May	13	33	283,500.00	11,526.10
June	17	21	421,400.00	26,427.62
July	15	57	148,000.00	11,414.15
August	11	30	135,950.00	17,623.75
September	7	23	153,250.00	1,058.00
October	11	32	93,650.00	5,743.35
November	10	24	46,600.00	7,941.00
December	24	33	1,872,850.00	23,169.65
January	25	40	400,000.00	17,167.80
February	29	25	975,200.00	235,659.56
March	25	34	384,150.00	44,587.19
	201	375	\$5,076,827.00	\$422,903.37



ENGINE NO. 1 WITH GAS-ELECTRIC TRACTOR.



RESCUE DRILL AT DRILL SCHOOL.
Shows Three Ways of Rescuing Men.

The amount expended in 1913-14 with the amounts requested and granted for 1914-15 are shown in the following table:

	Expended 1913-1914	Requested 1914-1915	Allowed 1914-1915
Payroll	\$213,181.21	\$221,600.00	\$220,000.00
Engines and repairs..	11,294.59	3,250.00	3,000.00
Real estate and repairs	9,806.20	12,000.00	8,000.00
Furniture and bedding	1,060.99	1,000.00	1,000.00
Lighting	2,629.86	2,300.00	2,300.00
Water and ice.....	986.74	1,000.00	1,000.00
Washing	987.71	1,000.00	1,000.00
Rent	500.00	500.00	500.00

Horse-shoeing	1,571.69	1,200.00	1,000.00
Extra horse hire.....	2,532.51	500.00	500.00
Forage	7,691.44	7,000.00	6,500.00
Harness and repairs..	143.60	150.00	150.00
Veterinary	181.50	200.00	150.00
Hose and repairs.....	5,221.61	5,000.00	3,800.00
Printing & stationery	780.31	950.00	950.00
General supplies.....	3,545.90	4,000.00	3,000.00
Wagons and trucks...	18,569.56	3,500.00	3,500.00
Coal for heating.....	5,165.56	5,000.00	5,000.00
Fire alarm.....	5,000.00	8,500.00	6,000.00
Telephones	1,069.59	1,200.00	1,200.00
Uniforms	249.33	250.00	250.00
Incidentals	913.44	1,000.00	1,200.00
New horses.....	425.00	.....	.....
Insurance .....	.....	2,300.00	2,000.00
Apparatus & Equip- ment for Motorization	.....	125,000.00	20,000.00
Fire prevention.....	.....	500.00	.....
	\$293,499.50	\$408,900.00	\$292,000.00

CENTRAL FIRE STATION FOR STAMFORD.

The new Central fire station for the city of Stamford, Conn., is to be a three-story brick building with basement.

In the basement will be located the boiler and store rooms; also gas heated clothes dryer.

The first floor will be used for apparatus, including chief's auto, motor engine, motor truck and chemical. It will also contain a work room and rack for drying hose.

The second floor at the front has rooms for the officers, including chief, deputy chief and captains, and rooms for the men with lavatories and baths.

The third floor at the front has a large recreation room and game and reading rooms, and additional rooms for men, lavatories and baths. The third floor also contains the fire alarm system, battery room and store rooms.

Provision is made for twenty individual sleeping rooms for the men, besides those for the chief and captains. Each man is to have a room of his own with clothes closet.

The exterior of the building is to be of white pressed brick with terra cotta and limestone trimmings. The building throughout will have fireproof floors con-

Best Times Made at the Drill Tower, 1913.

Work.	Company with auto.	Company without auto.	Record of company having best total. (Sq. A.)
Connect gates and stretch 200-ft. line, turn on water.....	.53	.49	.53
Shut down and pick up.....	1.36	2.09	1.36
Stretch to tower 350 ft., force door, carry line up stairway to 4th floor, water.	1.43	2.10	1.43
Shut off nozzle and back out with line.....	1.03	1.00	1.03
Stretch charged line up stairway to 3d floor, open nozzle.....	.53	.45	.53
Shut off water, break line and back down and out.....	1.16	1.10	1.16
Raise and place 25-ft. ladder.....	.24	.22	.24
Stretch line to roof, fasten with regulation knots, turn on water	2.41	2.41	3.01
Shut off water, break line and lower to ground.....	1.04	1.21	1.04
Hoist 25-ft. ladder to roof and raise it.....	1.18	1.25	1.16*
Carry and raise 45-ft. ext. ladder, 28-ft. and 25-ft. ladders.....	1.52	1.30	1.52
Carry line up 45-ft. ladder and in window, then up stairway to 4th floor, water.	1.02	1.14	1.08
Carry line up ladder, fasten and play in 4th story window.....	.45	.42	.45
Carry charged line up ladder, fasten and play in 3d story window .....	.38	.38	.38
Place extra length in charged line without shutting down hydrant	1.02	.55	1.02
Stop leak in bursted length without shutting down.....	.22	.16	.22
Connect cellar pipe and operate.....	.24	.35	.24
Connect distributor and operate.....	.19	.22	.19
Connect deluge set and operate.....	.39	.39	.42
Connect two 2½ lines from one and operate.....	.40	.51	.40
Connect two 2½ line and one wetdown line and operate.....	.26	.30	.26
Connect 2½ line to chemical tank.....	.10	.09	.10
Carry Chem. line outside to 3d story using wagon ladder and scaling ladder.	.43	1.09	.43
Connect to standpipe and operate.....	1.01	.54	1.01
Actual time .....	.....	.....	23.21
Add penalties .....	.....	.....	.05*
Total time	22.54	23.76	23.26

structed with steel beams and reinforced concrete. The interior walls of the apparatus room are to be of white pressed brick. All lavatories and bath rooms are to have tile floors and tile sides, and marble partitions around fixtures. All finished floors for second and third stories are to be of composition. First floor and basement will be of cement. The stairs are to be of iron and enclosed by brick walls. With the exceptions of windows and doors and interior wood trim, the building will be entirely of fireproof material.

The contract price of the building, including everything except the fire alarm system, is forty-eight thousand dollars. The plans were prepared by Nelson E. Emmens, a local architect, and the building is being erected under his supervision by the Harris Construction Co. of Stamford. The building is to be completed by the early part of the year 1915.

WASHINGTON FIRE DEPARTMENT

Fire Prevention Measures Reduce Losses More Than Half—Ten Pieces of Motor Apparatus—Causes of Fires—Building Inspection.

For the fiscal year ending 1913 the Washington, D. C., Fire Department made a new record for efficiency in fire fighting and fire prevention. The entire loss by fire for the whole year was only \$343,767, a decrease of more than \$500,000 from the preceding year. This decrease was due in a large measure to the efforts of the department toward fire prevention and to the numerous inspections made by the department. With an area of 38,404 acres and a population of 353,000, Washington has a paid force of 488 men in 38 stations and with 85 pieces of equipment. The department also has a fireboat with which to guard the waterfront.

F. J. Wagner is chief engineer and A. J. Sullivan is deputy chief. The force also includes 3 battalion chiefs, a fire marshall, a deputy fire marshall, 37 captains, 39 lieutenants, 25 engineers, 25 assistant engineers, 139 drivers and 302 hose and ladder men.

The apparatus is being changed to motor-driven as rapidly as possible, the number of these now in service being shown by the accompanying table—a total of ten besides four automobiles. The horse-drawn apparatus totals 83 pieces and includes 30 engines, 18 combination wagons, 3 hose reels, 12 hose carriages, 13 trucks, 1 water tower, and 8 chemical engines. There are also 12 life nets, 64 hand pumps and 5 fuel wagons in the department. There is in service 91,650 feet of cotton rubber-lined hose and 9,950 feet of rubber hose.

The department owns at present 255 horses. As fast as these are displaced by motors, they are either sold or transferred to other departments of the city. The district maintains a veterinarian who attends to all city horses.

During the year 660 bell alarms and 552 local alarms were registered. In addition, there were 23 second alarms and 32 assists by other companies. Of the 660 bell alarms, 77 were false, while 4 from the 552 locals were false. The loss caused by the bell alarm fires totaled \$301,253 and the local alarms amounted to \$42,514. This loss was covered by an insurance of \$4,683,952. The greatest number of fires from any known causes were:

Back-firing in automobiles	47
Boys playing with fire	65
Boys playing with matches	51
Chimneys (soot in)	62
Cigarette stubs (different causes)	47
Defective flues	15
Electrical wiring, short circuiting	44
Gasoline	57
Gas jets igniting lace curtains	14
Hot ashes	12
Matches, careless use of	129
Stoves, overheated	15
Rats gnawing matches	27
Sparks from matches	45
Sparks from chimneys	23
Spontaneous combustion	19
Suspicious fires	31

Of the 57 fires from gasoline, 17 were caused by its use for domestic purposes and 6 of the casualties were from the use of gasoline, 1 resulting in death of victim.

MOTOR DRIVEN VEHICLES AND APPARATUS IN THE FIRE DEPARTMENT OF THE DISTRICT OF COLUMBIA.

Motor Propelled, Motor Pumping Engines.				
Make.	Cylinders.	Built by.	Horsepower.	Received.
Continental	6	Ahrens-Fox	92.3	December 10, 1913
Continental	6	Ahrens-Fox	92.3	June 7, 1912
Continental	6	Ahrens-Fox	92.3	March 2, 1913
Waterous	6	Waterous Fire Engine Co.	101.0	May 16, 1911

Tractor Propelled, Steam Fire Engine.				
Make of Engine.	Style Tractor.	Engine built by.	Tractor built by.	Received.
No. 2 Metropolitan	Christie	American-LaFrance	Front Drive Motor Co.	Motor installed in 1914

Motor Driven, Combination Chemical and Hose Wagons.				
Built by.	Cylinders.	Hose, feet.	Horsepower.	Capacity of Tanks, gallons.
Seagrave	6	1,200	80	50
Ahrens-Fox	6	1,200	60	50
James Boyd & Bros.	4	1,200	40	50
				When received.
				November 23, 1913
				November 24, 1913
				September 25, 1912

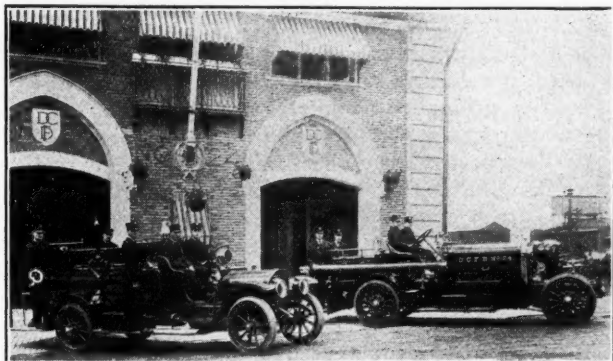
Motor Propelled Hook and Ladder Truck.			Received.
Built by.	Ladders, feet.	Length of Aerial Ladder, feet.	
Webb Motor Co.	311	55, gas and electric couple gear	May 5, 1913

Tractor Propelled, Hook and Ladder Truck.				
Built by.	Style Tractor.	Tractor installed by.	Ladders, Ladder, feet.	Received.
American-LaFrance	Christie F. D.	Front Drive Motor Co.	313 75	Tractor installed on May 24, 1914

Automobiles.			
By whom used.	Style.	By whom built.	Received.
Chief Engineer	Touring	Stutz Mfg. Co.	August 15, 1913
Deputy Chief Engineer	Roadster	Warren Mfg. Co.	August 26, 1912
First Battalion Chief	Roadster	Carter Motor Car Corporation	September 21, 1910
Superintendent Machinery	Roadster	Carter Motor Car Corporation	July 25, 1911
			Horsepower.
			50
			40
			40
			40

There were 31 fires of suspicious origin that were investigated by the fire marshall and in some cases arrests were made, but owing to insufficient evidence, none were held for court action. There were also 17 fires in which arrests were made of the incendiaries.

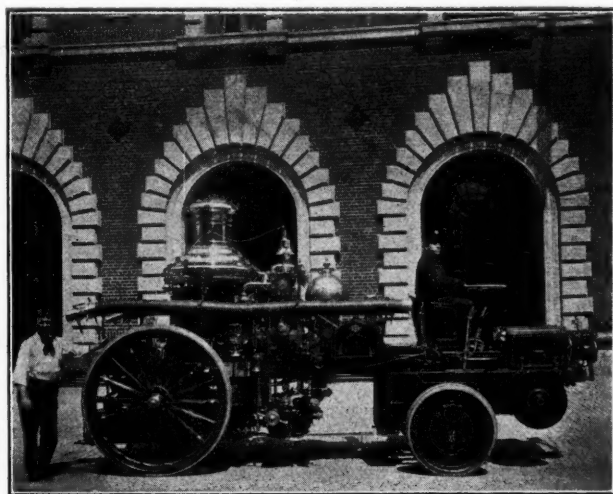
There is one fire boat, the "Firefighter." This boat is 101 feet long, 23 feet and 6 inches wide and has a draft of 9 feet. The displacement is 130 tons and the



NO. 24 ENGINE CO.; FIRST MOTOR COMPANY IN WASHINGTON.

speed 12 miles per hour. The fire appliances on the boat comprise two Blake duplex fire pumps, 17x11x10 inches, each with a capacity of 3,000 gallons per minute. There are 14 connections for 2½-inch hose so that shore fires may be fought. The boat is also used as an ice breaker in winter.

Much of the efficiency of the department is due to its rigorous system of inspection. During the year 23,574 inspections were made of mercantile establishments, hotels, apartment houses, office buildings, cellars, etc., to see that conditions liable to cause or promote fires were remedied. The department approved the issue of licenses for 55 moving picture theaters and 22 open air parks where pictures were displayed. All regulations are strictly enforced and such places are regularly visited and inspected. Thirteen theaters were inspected once or twice a week. Fire equipment and appliances are regularly tested and all scenery is treated with a fire resistant solution.



NO. 2 STEAM ENGINE, FRONT DRIVE MOTOR.

The storage and sale of explosives is also under the control of the department, as is the storage and sale of inflammable oils. Rules specify that kerosene and gasoline must be stored outside the buildings and in a metal tank buried 3 feet below the surface of the ground. The capacity of each tank is restricted to 50 gallons except by consent of the fire marshall.

STREET CLEANING AND REFUSE DISPOSAL IN RICHMOND

Collection and Incineration of Garbage and Rubbish— Itemized Cost of Operating Two Incinerators— Cleaning Streets and Alleys.

By S. T. PERKINSON, JR.*

The Department of Street Cleaning in Richmond, Va., with a force of about 180 men, at a total cost of \$188,560.28, including payroll and expense, during the year ending December 31, 1913, cleaned 82,871 squares of paved streets, 18,090 squares of paved gutters, 34,180 squares of paved alleys, 22,583 street crossings and hauled 11,752 loads of garbage, 265,795 loads of ashes and trash, and 1,928 loads of paper and excelsior. The garbage above mentioned is that collected and hauled by the carts of this department. Fully as much is hauled to the crematories by private concerns.

This city has a population of about 135,000 inhabitants and covers 11½ square miles, to which will be added about 16 square miles and about 30,000 inhabitants by the new annexation ordinance passed by the courts recently and which goes into effect on September 1 of the present year. There are about 28,016 buildings in the city from which to make collections of ashes, trash and garbage.

The classification of the whole department is as follows: Superintendent 1, assistant superintendent 1, chief clerk 1, assistant clerk 1, stable foreman 1, stable helpers 2, watchman 1, labor on garbage 22, on ashes and trash 80, on street cleaning 60, crematory foreman 1, crematory helpers 2, incinerator foreman 1, incinerator helpers 2, pound master 1, helpers 2, emergency man 1.

The men employed in the department are paid at the rate of \$2.25 per day of nine hours (from 7 A. M. to 5 P. M.) for five days with 45 minutes for lunch, and for six hours on Saturdays, from 7 A. M. to 1 P. M.

The following shows the make up of the department with salary and wages paid:

Superintendent	\$2,000.00
Assistant superintendent	1,200.00
Chief clerk	1,200.00
Assistant clerk	900.00
Stable foreman	900.00
2 helpers, 365 days at \$2.25	1,642.50
1 watchman, 365 days at 2.50	912.50
22 garbage men, 313 days at \$2.25	15,416.50
Crematory foreman, 365 days at \$2.75	1,003.75
2 helpers, 365 days at \$2.25	1,642.50
Incinerator foreman, 365 days at \$2.50	912.50
2 helpers, 365 days at \$2.25	1,642.50
80 ash collectors, 313 days at \$2.25	56,340.00
60 street cleaners, 313 days at \$2.25	42,255.00
Pound master, salary	900.00
2 helpers, at \$720 per year	1,440.00
1 emergency man for dead animals	608.35

Total cost of payroll\$130,916.10

GARBAGE COLLECTION AND DISPOSAL.

The garbage is collected twice or three times each week by a force of 22 men with single dump carts built to hold 1½ cubic yards. These carts are built gondola style and are lined with tin and sheet iron which makes them perfectly water tight.

Each garbage collector is assigned a certain route and hauls from 5 to 6 loads of garbage a day, according to the distance to the crematory and incinerator. The average haul to these disposal plants from any portion of the city is about 2¾ miles for the round trip.

In addition to the garbage carts, several large two-horse wagons are used in this work. The garbage collected by the wagons, which are worked in the outlying districts, is hauled to the country and used for fertilizer.

*Chief Clerk of the Department of Street Cleaning.

By doing this conditions are relieved at the disposal plants and the haul is shortened.

At the present time this department is attempting to collect garbage from the 28,016 buildings in the city with the small force of 22 men. Thus, 1 man has 1,273 buildings per week from which to make collections, which is about 212 houses to be cared for daily by 1 man.

In addition to the garbage collection, the department has installed an emergency carrier in the shape of an Indian motor cycle with a side box attached for the purpose of removing small dead animals from the streets and alleys of the city. This is a marked improvement, as heretofore a garbage collector had to be taken from his regular route and sent to some other section of the city to remove the carcass. This man and machine is kept on hand at all times and as soon as a complaint is received at the office the man is sent at once and the animal removed.

All garbage and combustible matter is cremated, for which we have in operation two plants having a capacity of fifty tons in twenty-four hours. Each of the plants requires three men for operation. One plant is an old brick furnace built by the Morse-Boulger company of New York, and has been in use for the past twenty years. The total cost for the maintenance of this plant was \$6,114.55 for the year, including payroll and expense.

The other is a more up-to-date plant with steel jacketed furnace, built in the early part of 1910 by the Decarie Incinerator company of Minneapolis, at a cost of \$40,000. The total cost for maintenance of the new plant for the year was \$3,817.74, including payroll and expense. The reason for the difference in the cost of maintenance of the two plants is that the new plant uses very little coal, all garbage being destroyed with the dry trash and other combustible matter, and being a comparatively new plant, few repairs were needed.

With the two plants in operation, the city can not begin to dispose of all of the garbage, owing to the long haul, and the superintendent of the department has recommended to the administrative Board the erection of another plant in the southwestern portion of the city.

COLLECTION OF ASHES AND TRASH.

The city is divided into five districts, from which collections are made once each week by a force of 80 men. This force is divided into gangs of 5 or 6 men each, each gang consisting of two barrel lifters and 3 or 4 carts and drivers, the number of carts depending on the distance over which the refuse has to be hauled to

the dumps. The average haul to the dumps from any portion of the city is about 2½ miles to the round trip.

The department at the present time is contemplating the installation of motor trucks to be used in the hauling of ashes and trash, which in a very short time will have to be hauled to the country owing to the fact that all of the low places in the city which can be used for dumping purposes are being rapidly filled in.

In addition to the carts for collecting ashes and trash, three large slat wagons are used to collect all waste paper and dry trash, which is carried to the incinerator and used in helping to destroy the garbage.

The city ordinance prohibits any paper and combustible matter being placed with the ashes and trash, but up to the present time this ordinance has never been enforced. The mixing of paper and combustible matter with the trash and ashes has caused frequent and troublesome dump fires.

One improvement which has been recommended by the superintendent of the department is an ordinance to compel householders to use a regulation size ash and trash can. If this ordinance were passed it would facilitate the collection of ashes and trash to a great extent. At the present time some of the ash receptacles are so large that it is impossible for two men to handle them, and quite often the driver has to be called down from his cart, thereby losing valuable time.

SWEEPING STREETS AND ALLEYS.

All paved streets are swept twice each week by a force of sixty men divided into two gangs, each gang consisting of 3 sprinklers, 4 sweeping machines, 10 broom hands, 6 carts and drivers. These men sweep the streets five days in a week and on Saturday nights. All paved gutters and the alleys are cleaned once each week in summer, and three times each week in winter when the weather permits.

We also have installed in the department 4 sanitary flushing machines, which do very good work when the streets are mucky from snow, in very rainy weather and after freshets, which are quite frequent in the lower section of the city. This method of flushing the streets is a great improvement over the old way of using fire hose.

We also have in use what is known as the "block system," each man having from 8 to 10 blocks of the principal business streets to keep clean. This is a great improvement in the line of street cleaning, as it keeps the streets clean at all times.

The department has had much trouble with storekeepers and careless pedestrians who continually litter

WORK DONE IN THE STREET CLEANING DEPARTMENT DURING THE YEAR 1913.

Months, 1913.	No. of squares of sts. cleaned.	No. of squares of gutters cleaned.	No. of squares of alleys cleaned.	Squares of sts. scraped.	No. of squares of grass cut.	No. of street basins cleaned.	No. of st. crossings cleaned.	No. of loads of garbage.	No. of loads of ashes and trash.	Loads of paper and excelsior.
January	3,538	562	2,223	69	...	160	1,397	483	14,000	143
February	3,950	1,397	2,170	272	...	175	1,876	1,030	19,000	160
March	5,798	1,590	2,076	270	...	260	2,140	975	18,000	140
April	7,480	1,253	2,903	350	30	590	2,490	985	16,790	135
May	6,580	1,395	4,120	110	260	695	2,130	1,076	18,370	127
June	7,480	1,571	2,892	51	390	780	750	927	20,380	148
July	7,840	1,395	3,570	27	78	684	990	786	21,976	161
August	8,790	1,596	3,295	110	90	762	1,095	870	27,850	176
September	6,589	1,780	3,570	75	120	750	1,121	996	29,982	180
October	8,976	1,685	2,760	73	91	490	1,793	1,573	26,970	196
November	7,792	1,702	2,768	46	97	560	1,593	1,047	23,927	176
December	8,058	2,164	1,833	260	...	635	5,208	1,004	28,550	186
Total	82,871	18,090	34,180	1,713	1,156	6,541	22,583	11,752	265,795	1,928

up the streets of the city, making them a receptacle for store sweepings, packing materials, waste paper and fruit parings, to say nothing of the trade wastes left to be taken care of by the department. Leaky and broken carts are used by contractors with the result that many of the most important streets in the city are continually covered with sand, broken bricks and red clay. It is very discouraging to the cleaners to see a street that has just been swept become littered with trash, paper and refuse within an hour. It is manifestly impracticable as well as beyond the financial capacity of any community to have the street cleaners always at hand to receive the rubbish swept off the sidewalks or thrown in the streets by any one—the only way to keep the streets always clean.

The department has to take care of the removal of all garbage from the two markets, has the supervision of the city pound for dogs and goats and removes snow from the streets during the winter. Up to the present year it cleaned all street basins, but this has now been placed under the supervision of the city engineers' department, where it rightfully belongs, as that department installs all street basins and should have the cleaning of same.

The removal of snow heretofore has been done by the regular employees of this department alone, but during the present year the Administrative Board allowed this department an emergency fund to the amount of \$800 with which to employ extra help in this work.

During the year 1913, 2,247 dogs were impounded, 334 redeemed, 29 sold, 1,715 killed and 160 released. One goat and 165 cats also were killed. The receipts of the year were \$372.25, as compared with \$290.25 in 1902, the first year the pound was maintained. The total receipts for the year, including the fees received from licensing, was \$7,796, against \$5,310 in 1902. The expenditures totaled \$3,007.08, of which \$2,310.10 was for payroll and \$536.71 for removal of the pound.

Appended is an itemized statement of the money ex-

pendent in the maintenance of the department, together with tables showing the amount of work accomplished during the year.

Expenditures for the Maintenance of the Department for the Year Ending December 31, 1913.

Feeding	\$13,617.37
Shoeing	1,587.12
Repairs (carts, sweepers, etc.)	2,301.17
Harness	1,297.49
Brooms (hand and machine)	3,714.03
Surgeon and medicine	474.75
Picks, shovels, etc	323.01
Injury to employees (claims for time lost)	776.55
Machines, mules, sprinklers, etc	19,722.29
Balance due on new stable	6,103.59
Miscellaneous, (oil, stationery, phone, hose, etc.)	2,144.49
Total	\$6,114.55

Expenditures for the Maintenance of the Crematory for the Year Ending December 31, 1913.

Payroll	\$2,912.20
Coal	2,006.40
Wood	42.50
Phone	48.00
Oil	6.00
Water	32.92
Cement and pitch	43.13
Ice	20.22
Lumber	4.45
New toilet	70.00
Bricks	529.90
Castings	40.38
Grates and repairs	190.51
Freight and hauling	167.88
Total	\$6,114.55

Expenditure for the Maintenance of the Incinerator for the Year Ending December 31, 1913.

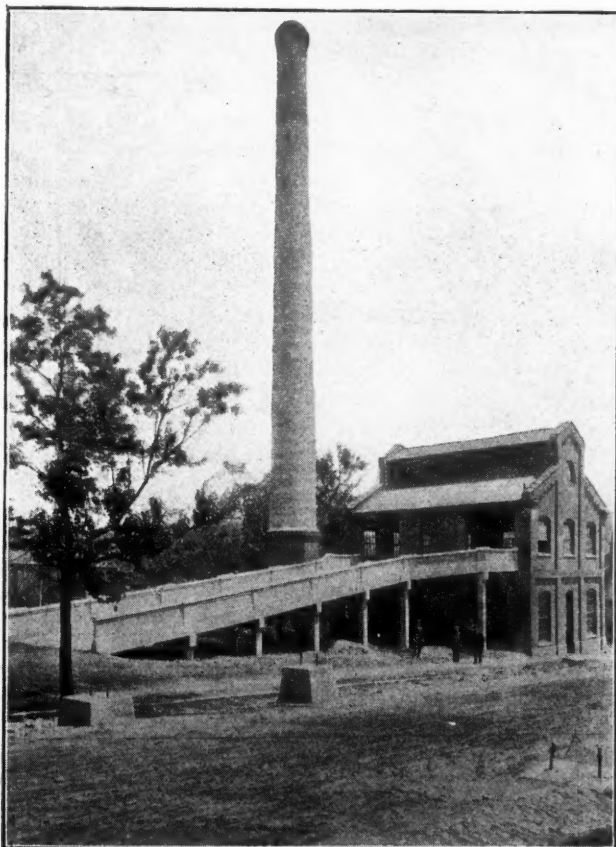
Payroll	\$2,224.85
Coal	977.77
Wood	14.65
Gas and water	60.24
Ice	8.47
Roofing plant	195.09
Repairs	61.50
Grates	228.29
Castings	46.88
Total	\$3,817.74

Work Done at the Incinerator During the Year 1913.

Months, 1913.	Loads of wet garbage.	Loads of mixed garbage.	Total.	No. of dead animals.	No. of loads of paper.	Loads of on-lions & pots togs.
January	327	275	602	101	143	...
February	391	313	704	184	160	...
March	476	298	774	133	140	...
April	537	370	907	195	136	...
May	658	421	1,079	198	127	143
June	1,072	392	1,464	242	148	260
July	981	126	1,107	146	161	180
August	1,185	156	1,341	182	176	356
September	1,002	240	1,242	154	180	...
October	722	183	905	70	196	...
November	650	138	788	104	176	...
December	572	143	715	90	186	...
Total	8,573	3,055	11,628	1,799	1,928	939

POLICEMEN'S MACES.

During the past few weeks the policemen of Pittsburgh, Pa., have been equipped with new maces of a type different from those formerly in use. The new maces are only 13 inches long, and are carried in a special pocket of the uniform, so that when not in use they are out of sight.



DECARIE INCINERATOR AT RICHMOND.

MUNICIPAL ABATTOIR AT GRAND FORKS

Used by Private Butchers at a Rental—Is Self-Sustaining and Ensures Sanitary Killing of Undiseased Animals.

By H. G. LYKKEN, City Engineer.

Grand Forks, N. D., was the third city in this country, as far as known, that undertook the construction and operation of a municipal abattoir. The city was forced into the venture by the condition of the privately-owned slaughter houses, which were nothing but filthy sheds without water or sewer facilities, with no protection from flies or means for disposing of the offal. Attempts were made to get private capital interested in the installation of a suitable plant, but nothing came of it and the city finally voted \$12,000 for the purpose.

Construction was begun in the fall of 1913 in accordance with plans furnished by the writer, and the abattoir was put in operation in February, 1914.

The plant is situated along the railroad track and within ten blocks of the business section of the city. It consists of a main building 30 feet by 50 feet, one story and basement. On the first floor is the beef killing room, 30 by 35 feet, arranged with three killing beds, and a hog killing room 15 by 30 feet. On the north is a wing 20 feet by 40 feet constituting the cooler. This is divided into a 10 by 20-foot alley and a 20 by 30-foot main cooling room. Ice is used for cooling and a capacity of 225 tons is provided in the overhead bunker. On the south side is a wing 15 by 15 feet, one story and basement, used for a rendering plant.

Two sheds 20 by 40 feet (with ample room for several more when business warrants their construction), runways and unloading platforms are provided to take care of the live stock.

The entire plant is constructed of brick and concrete, with tar and gravel roof. All floors are of reinforced concrete and the killing rooms and rendering plant are provided with a six foot high wainscot of smooth cement plaster.

Overhead trackage is provided throughout. Hot and cold water are available at all points. The beef is brought in on the killing beds and the carcass is handled by hoists. When butchered it is taken by the overhead trolley to the cooling room or the loading platform.

The hogs enter a small pen, where they are shackled and hoisted onto the sticking and bleeding rail. From this they go into a steam heated scalding vat, then to the scraping table, from which they are hoisted to the trolley, shoved along, dressed and passed on into the cooler.

In the basement is a twenty horse power boiler used to heat the building, heat water and operated the rendering tank. Toilet facilities, lockers for the butchers, etc., occupy part of the space, but most of it is available for storage and future development in the utilization of the by-products.

Three sets of butchers may work independently in the beef killing room and one set in the hog room. The plant is in fact large enough for twelve to fifteen men to work if necessary.

The rendering plant consists of a six hundred gallon rendering tank, dryer, vacuum pump, etc. The rendering tank is placed over the dryer so that the material is dumped into the dryer from the tank by merely opening a gate. A separate opening and hopper on the dryer is provided to admit the contents of paunches and other material that it is not desired to put through the tank.

The city maintains the plant and has one man in charge. The butchers do their own killing and are

charged for the use of the plant, with water and the other facilities, and not to exceed ten days' storage in the cooler. This charge is \$1 for beef, 50 cents for hogs, and 25 cents for sheep and veal. This arrangement has proven eminently satisfactory to the butchers, as the time saved in having the plant so near the center of the city and within two blocks of paved streets amounts to as much and often more than the charge. It may be said that the butchers desire to do their own killing and dressing of the meats. Individuals as well as market men can have their animals dressed for a small additional fee by the man in charge of the plant.

Contrary to expectations, the plant has been self-sustaining almost from the start. More business has been done than was anticipated and there has been a steady growth. The plant is going to prove a stimulus to the farming community, as it affords a better market for cattle and hogs. Before the plant was established the butchers could buy only for immediate consumption. As a result, farmers would often have to take their stock home or sell on a glutted market. This happened so often that many gave up raising stock.

It is confidently expected that the time will soon come when all meats can be home grown, with considerable saving to the consumer as well as advantage to the farming community. But the great advantage of a municipally operated slaughter house is, of course, the sanitary condition surrounding the preparation of this large share of the food supply and the inspection of all animals for diseases made possible by requiring all killing to be done in the one place.

The cooler has operated very satisfactorily during this unusually hot summer. The temperature has never exceeded 38 degrees and all meats have been retained in perfect condition even as high as three weeks. The carcass dries very quickly owing to the excellent circulation of the air obtained with the construction adopted. The walls of the cooler consist of twelve inches of brick, a coating of asphalt, two inches of 'Lith,' a second coating of asphalt, a second two inches of 'Lith,' a third coating of asphalt, and one inch of cement plaster which constitutes the interior finish of the walls.

PHILADELPHIA'S SECOND ANNUAL CLEAN-UP WEEK.

For conducting Philadelphia's second annual cleaning-up week, April 20 to 25, 1914, a committee of three men—John Nooson, of the Bureau of Highways; Joseph Mallory, of the Bureau of Fire, and R. R. Barrett, of the Bureau of Health—was appointed by the mayor. To assist them in conducting the campaign, the Chamber of Commerce and the Merchants and Manufacturers' Association appointed a committee of citizens.

In order that every citizen might know the date and object of clean-up week and might give his cooperation, a very extensive advertising campaign was inaugurated in which were sent out 3,400 personal letters, 750,000 gummed labels, 260,000 bulletins, 20,000 colored display posters, 750 streamers, 1,000,000 cardboard folders, 300,000 badges, 300,000 blotters, 350,000 circulars, colored lantern slides, and return postal cards. The bulletins were distributed by the police and the 350,000 circulars were sent out through the Metropolitan Life Insurance Co. to its policy holders. In addition, a very extensive newspaper campaign was carried on and even clergymen on April 19 requested the co-operation of their parishioners.

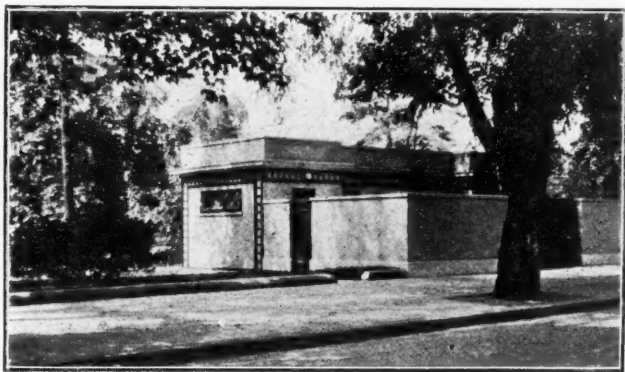
During the week, special teams were put on by the ash and waste collectors and temporary dumps were arranged to care for the excess material. All the municipal buildings were cleaned and all the offices and desks

cleaned out. Lamp posts and fire plugs were repainted and a specialty made of cleaning up vacant lots. More rubbish and waste was collected than could be handled and the work was extended into the next week. In all, 135,000 cubic yards of waste material, including everything from a tin can to a grand piano, were removed. It was estimated that the material, if placed on a city lot 300 feet square, would be forty feet deep.

Where property owners would not clean vacant lots, the Bureau of Health issued mandatory orders, and if these were not complied with the work was done by the city and the cost liened against the properties. Over 500 lots were cleaned up.

PARK COMFORT STATIONS IN WASHINGTON.

The illustration shows the type of public comfort stations and park lodges recently erected in Washington, D. C., by act of Congress. They are constructed of hollow tile covered with pebble dash. The trimmings are



PARK LODGE AND COMFORT STATION, OPPOSITE WHITE HOUSE, WASHINGTON, D. C.

painted in dark green. Four of these lodges have been constructed, each costing \$3,500. They are located in four of the prominent small parks or squares of the city, the one in the illustration being in Lafayette Park, opposite the White House.

KEEPING ANIMALS IN CITIES

Court Decisions As to Validity of Ordinances Forbidding or Regulating the Keeping of Hogs and Other Animals Within Corporate Limits.

By J. SIMPSON.

The keeping of animals on private property within municipal limits is a common subject of regulation by municipal ordinances and regulation of boards of health, and the question of the validity of particular ordinances has called forth a wide range of opinions as to their reasonableness or unreasonableness.

The majority of the cases deal, naturally enough, with the keeping of hogs and hog-pens. Attempt was made to enforce a town by-law forbidding the keeping of more than five swine, exclusive of offspring less than four months old, by any person within the limits of the town of Arlington, Mass., a penalty of a fine to be recovered on complaint by the town treasurer. It was held that, as Massachusetts Rev. Laws (c. 75, 891), provides that the board of health of a city or town shall from time to time assign certain places for the exercise of any trade which is a nuisance, etc., and may prohibit the exercise thereof within the limits of the city or town or in places not so assigned, the board of health had jurisdiction of the employment of keeping swine within the town, and hence the town by-law was void. *Com. v. Rawson* (1903), 183 Mass. 491, 67 N. E., 605.

In that case the board of health's jurisdiction prevailed. But in an earlier Massachusetts case, *Com. v. Patch* (1867), 97 Mass., 221, complaint was made for keeping one swine in violation of by-laws of the city of Springfield, prohibiting the keeping or maintaining of swine within certain districts of the city, under a penalty not exceeding \$20 for each offense. The defendant denied the power of the city council to pass any ordinance of the kind. It was held, however, that the ordinance was intended as a sanitary regulation, and to promote the comfort and health of the inhabitants. That it was made to apply only to a part of the city was not material, if that part was so situated as to require peculiar and exceptional provisions. The city was authorized by its charter to make all such "salutary and needful by-laws as towns may make and establish." The object of the ordinance in question was manifestly to protect the inhabitants and travelers in a close and populous neighborhood from offensive and unwholesome smells. "It may indeed be found that the prohibition of offensive trades is not the proper subject of a by-law, because that matter is specially provided for by statute; and to prohibit their exercise in any particular locality in a city by an ordinance would interfere with the right of appeal to a jury which the statute secures. But the keeping of swine can hardly be considered a trade within the meaning of the law; and the powers given to the board of health may be referred to, as showing the extent to which the law intends to confer upon municipal authorities the power to suppress offensive and unwholesome practices. In default of the appointment of any other, the city council constitutes the board of health; and may make such regulations as it judges necessary for the public health and safety, respecting nuisances, sources of filth, and causes of sickness. "The board of health of a town has been held authorized, under Massachusetts Pub. St., c. 80, Sec. 84, to pass a qualified order forbidding the exercise of the employment of keeping swine within the town" without a permit in writing first obtained from the board of health. *Quincy v. Kennard*, 151 Mass., 563.

A city ordinance declaring it to be a nuisance to erect hog-pens within any enclosure in the city limits, or to permit hogs to run at large within any lot or enclosed place in the city except at slaughter pens authorized by the mayor and aldermen, and that all hog-pens or lots then used as such should be abated, was held to be invalid, because too broad and sweeping in its provisions. "Hogs in the city of Jackson," it was said, "may or may not be a nuisance, and any ordinance on the subject should be framed accordingly." *Ex parte O'Leary* (1887), 65 Miss., 80; 3 So., 144.

In a late Mississippi case, *Comfort v. Kosciusko* (1906), 88 Miss., 611; 41 So., 268; 9 Am. & Eng. Ann. Cas. 178, an ordinance declared it to be unlawful for any person to keep or permit to be kept within the corporate limits of the city any pig or pigs, hog or hogs. It was attempted to distinguish this case from the *O'Leary* case because the city of Jackson was operating under a special charter, while the city of Kosciusko operated under the code of 1892, but the court held the ordinance invalid as being too broad. "Section 2928 of the annotated code of 1892 empowers municipalities to suppress hog-pens. It also gives the power to make regulations to secure the general health of municipalities and to prevent, remove and abate nuisances. The keeping of hogs in a municipality, or the erection of hog-pens, may or may not be a nuisance, and it is only when they are such that a municipality has the power to interpose and suppress hog-pens or prevent the keeping of hogs in a municipality. An ordinance which provides

generally that hogs may not be kept in a municipality, without reference to whether they are or are not a nuisance, is too broad and sweeping in its provisions, and cannot be upheld. When the keeping of hogs within a municipality becomes a nuisance, no matter where they may be kept therein, it not only has the power, but it is its duty to abate the same."

In the last mentioned case the court referred to the case of *Darlington v. Ward* (1896), 48 S. Car., 570; 26 S. E., 906, as standing by itself in the extent to which it has gone in upholding municipalities in the right to prohibit the keeping of hogs within their borders. There the ordinance prohibited the keeping by any person of any hog or hogs on his premises. A conviction of a violation of the ordinance by the keeping of one hog on a two-acre lot was sustained by a divided court. The chief ground for sustaining the conviction was stated to be that in South Carolina a municipal ordinance enacted within the power conferred by a constitutional act, cannot be declared invalid because it is unreasonable.

It has been held that a city may prohibit unconditionally the keeping of hogs in a pen. An ordinance provided that: "No distiller, butcher, stock-dealer, or other person shall collect or keep any cows or hogs in a pen, or otherwise confine any hog or hogs in the city, so as to create a nuisance." "This," it was held, "in plain terms, forbids the keeping of hogs in a pen, without any reference to the possible effect. As to other modes of confinement the prohibition is conditional upon the subsequent creation of a nuisance. *City of St. Louis v. Stern* (1876), 3 Mo. App., 48, 54.

In *Smith v. Collier* (1903), 118 Ga., 306; 45 S. E., 417, an ordinance of a municipal corporation which declared that "no hogs shall be permitted to remain within the corporate limits between the first of April and the first of October," was held not to be, upon its face, so unreasonable that it would be the duty of the courts to declare it void.

Under statutory authority to abate nuisances which may become injurious to the public health, and to pass ordinances for the preservation of health, a city ordinance forbidding the keeping of hogs within one mile of the courthouse was upheld as reasonable and not discriminatory, although the city extended one and a half miles in each direction from the courthouse. *Ex parte Glass* (Tex.), 90 S. W., 1108. And a statute which authorized the trustees of an incorporated town to declare what should constitute a nuisance and take such other measures for the preservation of the public health as they should deem necessary, was held to empower a town to adopt an ordinance prohibiting the keeping of hogs in a pen within its corporate limits and within 200 feet of a street or alley of the town. *Miller v. Town of Syracuse* (Ind.) (1907), 80 N. E., 411. But a statute empowering the municipal council of the city of Memphis by ordinance to prohibit pig pens, cow stables and dairies within two miles of the city limits, was held to be unconstitutional. *Malone v. Williams*, (Tenn.) 103 S. W., 798. An ordinance of a North Carolina town of 700 inhabitants prohibited keeping a hog pen with a hog therein within 100 yards of another's dwelling, storehouse or well. The ordinance was upheld as valid under the authority of Section 3802 of the North Carolina Code, as well as at common law. It was held that the commissioners of a town can prohibit the keeping of hog pens in the town to such an extent as to protect the public from nuisances, and of the limits necessary to be prescribed they are the sole judges unless the ordinance made for the purpose is unreasonable. *State v. Hord*, 122 N. C., 1092. Another case involved the validity of the regulation, adopted by the board of health

of a city of 1,500 inhabitants (enforced by an ordinance providing a penalty for its violation), prohibiting hog-pens containing hogs except for purposes of commerce. The defendant maintained a pen in which was one hog, not for the purposes of commerce. The pen was kept clean, and was not a nuisance by reason of filth therein, but was a nuisance, if at all, because of the regulation of the board of health. It was held that the regulation and ordinance were not unreasonable. *Cedar Rapids v. Holcomb*, 68 Iowa, 107; 26 N. W., 33. It has been held, in a civil suit, that the maintenance of a hog-pen or pigsty in close proximity to a dwelling house is a nuisance per se, for which an action may be maintained for damages and injunction in abatement. *Whipple v. McIntyre*, 69 Mo. App., 397.

Other cases deal with the keeping of poultry, pigeons and stallions within municipal limits. A regulation of the city of Washington prohibited the keeping of any kind of live fowls or pigeons in any square or block in the city, which has 75 per cent of its property improved, without the consent of 75 per cent of the residents within a radius of 100 feet from the boundaries of the premises upon which the fowls or pigeons were to be kept. It was held that the regulation was void for indefiniteness. It did not determine whether residents of another block, if within 100 feet of the premises where the fowls were to be kept, could object to the keeping of the fowls, nor fix definitely the place from which the measurement was to be made. *District of Columbia v. Keene*, 31 App. Cas. D. C., 541. Another regulation prohibited the keeping of fowls or pigeons inside the fire limits of the District of Columbia, within 25 feet of any structure owned by another and used for human habitation, occupation or assembly, whether said structure was in the same street or an adjacent block or square. A permit to do so might, however, be procured from the health officer. No roosters were to be kept without the written consent of a majority of the householders in that square or block. The regulation did not apply to markets and produce dealers and stores for the sale of fancy fowls. The regulation was upheld as not, upon its face, unreasonable. *Pitchlynn v. District of Columbia*, 36 App. Cas. D. C., 58. Section 78 of the Sanitary Code, prohibiting the keeping or killing of poultry in any place "within the built-up portions of the city of New York, without a special permit in writing, from the department of health, and subject to the conditions thereof," has been upheld as valid. *People v. Davis*, 78 N. Y. App. Div., 570; 79 N. Y. Supp., 747.

Ordinances prohibiting the keeping within municipal limits, or certain parts thereof, of stallions or jacks for breeding purposes, even though out of sight, if the noise made is such as to constitute a nuisance, have been held to be reasonable and valid. *Ex parte Foote*, 70 Ark. 12, 65 S. W., 706; *Hoops v. Ipava*, 55 Ill. App., 94; *Tarkio v. Miller*, 167 Mo. App., 122, 151 S. W., 567.

CONVICT LABOR ON ARIZONA HIGHWAYS.

The state engineer's office of Arizona has issued a report giving a statement of the work done during the month of July, and with this has included figures concerning the cost of convict labor on highway work in Tombstone Canyon and on the Globe-Roosevelt highway, and it is the intention of the office to issue similar statements monthly in the future.

In the Tombstone Canyon highway work the convicts were employed for 2,921 men-days, of which 925½ should be deducted for sickness, Sundays or work done around the camp. The actual cost per man per day for maintenance of the convicts was 91 cents, or \$1.33½ per man-day of actual productive work.

On the Globe-Roosevelt highway the average number of prisoners was 38, of which an average of 8 were engaged on camp work, an average of 2 were sick, leaving an average of 28 working on the road. The actual cost per man per day was 67.9 cents, or the actual cost per man-day of actual work was 90.2 cents.

On the basis of these costs per day, the unit costs of the work on the two roads respectively were calculated to be as follows: Excavating solid rock, \$1.375 and 87 cents per cubic yard; excavating loose rock, 59 cents and 36.1 per cubic yard; earth excavation, 28 cents and 19 cents per cubic yard; masonry, \$5.46 and \$4.069 per cubic yard. In the Tombstone work concrete culverts cost \$6 per cubic yard; solid rock excavation in culverts \$1.16, and in ditching \$1.52; loose rock excavation in culverts, 16 cents, and in ditching, \$1; earth ditching, 46 cents. In the Globe-Roosevelt highway 110 lineal feet of corrugated iron culverts were placed at a cost of \$11; raking cost \$16.20 per mile, and re-dragging \$1.537 per mile.

CITY ASSESSORS' METHODS

In Fifty-two Cities of New York State—Tax Maps, Field Books and Assessment Rolls—Assessing Systems.

The Committee on Taxation of the Conference of Mayors of New York State during the past year prepared a list of 71 questions which it submitted to the assessors of the 52 cities of the state; 20 of these questions dealing with the equipment of assessors, such as field books and tax maps; 22 dealing with real estate valuations and 23 with personal property valuations. Fifty-two assessors answered these questions frankly, and from their answers the committee prepared a statement of conditions in the state, accompanying it with recommendations of general applicability. This statement and recommendation are given herewith.

TAX MAPS.

In twenty cities the assessors are provided with tax maps, one uses an insurance map and twenty-four do not have maps. The one question which seemed to be answered unanimously was, "Would a tax map help you in your work?" Forty said it would—one said probably it would. Not one answered otherwise. Some of the answers were: "It would be a wonderful help," "Could not get along without it," "A very great help," "Most assuredly," "Invaluable," "It is essential," "Would not be without it," "Certainly would." In the suggestions for improving the system, six offer tax maps as one of the improvements that should be substituted.

While your committee realizes that the power to furnish this useful tool to the assessors is in the hands of the local authorities, the question suggests itself, in view of the unanimity of the responses, whether tax maps should not be required by law in all cities.

The State Board of Tax Commissioners admirably stated the reasons for tax maps in their report for 1911 as follows:

There is a strong tendency towards the adoption of these maps in various localities throughout the state, and we believe that such course would accomplish a decided advance towards correct assessments. It would afford an official description by reference to such maps, which would greatly lessen the chances of mistake or error which exist when the local assessor is required to make the description, which is often based upon insufficient or misleading data. There are localities in which some lands have produced no taxes for years, for the reason that they have been overlooked by the assessors. This condition could not exist if maps were used, because every portion of the map would necessarily be accounted for in some manner. Many of the cities and incorporated villages of the state are now using maps.

Another argument in favor of tax maps is that their use

eliminates all question as to the sufficiency of a description. Many assessments have been set aside by the courts for the reason that the description did not properly identify the property assessed. Whether a particular description is sufficient can be determined to a certainty only by the courts. There would be no uncertainty if proper tax maps were issued.

The form of the assessment roll would be greatly simplified if the long description which the assessors must now place upon their rolls were eliminated and in lieu thereof insert merely three numbers at the head of three separate columns—one for the section, another for the block number and the third for the lot number of the parcel assessed.

We have yet to learn of any locality which has established the use of tax maps that is not so thoroughly satisfied that there is no thought of returning to the antiquated plan which often produces long and inaccurate descriptions.

The Form of Tax Maps.—The form of tax maps depends somewhat upon the size and character of the city and upon the amount of money available for the preparation of the maps. For any system the city should be divided into sections, the sections into blocks, and the blocks into the separately assessed parcels of real estate, known as lots. The sections should be numbered consecutively from one up, and the blocks should be numbered consecutively from one up, or at least consecutively within each section. If the latter system is employed and the number of blocks in a section is less than one hundred the blocks in section one may be designated by the numbers from one up, and in section two the first block may be designated block number two hundred and the remaining blocks in the section numbered consecutively from two hundred. By using this system the number of the block will always determine the section in which it is located.

The boundaries of sections and blocks should always be of a permanent character, such as streets permanently located on the city map or waterways. The boundaries of sections and of blocks should never be changed unless the changes become absolutely necessary. It sometimes is advisable to delay the division of a territory into permanent blocks until the location of streets is definitely and permanently determined. Under these circumstances a much larger area than will ultimately be included within a single block may be laid down on the map as a plot. That part of the map will be regarded as a tentative map, later to be changed as permanent streets are laid out into permanent blocks bounded by definitely and permanently located streets.

The lots within a block should be numbered consecutively, commencing with the lower left hand corner looking north. If the block is divided into the number of lots likely to continue without material change the existing lots should be numbered consecutively, but if a block has not yet been divided into lots and at present consists of but one lot, that lot should be numbered one, and when some lot is cut out of the block it should receive approximately the number that it would receive if lots of standard size intervened between it and the lower left hand corner of the block. When the map is changed, as it should be whenever lots are divided or consolidated, the year of the assessment for which the lot is divided or consolidated should be entered upon the map. When an old lot is divided the change should ordinarily be made with a different colored ink, and the line or lines which may be crossed out should be crossed out by small crosses placed upon the line. Where two lots are consolidated the higher number should be dropped and the lower number retained. Where a lot is divided and no blank numbers are available, it should be given a letter or a fraction; thus, if lot number seven is divided into two lots, the lot to the left would be numbered seven, and the lot to the right would be numbered seven a, or seven and one-half.

This description of tax maps is not made with the idea that it covers the subject, but merely by way of suggestion to those who contemplate the preparation of such maps.

ALL REAL PROPERTY NOT ON THE ROLL.

"If tax maps are not used, can you be certain that all real property is on the assessment roll?" was one of the questions asked. Twelve say frankly they are not certain, one was fairly certain, thirteen were certain that all property was assessed. The next question was, "How do you know?" Of the thirteen who answered yes, four said they knew by visiting each parcel, six knew because they checked the roll from their field book, one knew because he had been the assessor before and had measured all of the lots, one depended on the registry of deeds, one did careful work.

Many who have tax maps and did not realize that they need not answer this question, said they were certain because they check off all property on the map.

FIELD BOOK.

In forty-three cities the assessors use field books; two do not; twenty-two note in more or less detail the considerations which appear in deeds, mortgages which are placed upon property, the rent of the property, and the asking and selling prices which come to their knowledge and any special condition surrounding the property. All of these facts are important, if not essential, to proper assessment work and it is to be regretted that in twenty-one cities the field book is used for no other purpose than noting merely the changes in the names of owners as they occur from time to time. Under Section Thirty of the Tax Law, as it now stands, in cities which have adopted tax maps, reference to the lot, block or section numbers on the map is a sufficient description of the parcel in the assessment roll. So that while changes in ownership should be noted, the best use is not being made of a field book where this is its sole purpose.

A field book should be arranged so as to show the name of the owner of the property, the size of the lot, the size of the house, the number of stories of the house, the number of houses on the tax lot, the house number and the lot number, while the heading should show the section and block numbers and the street. There should be two columns for land value, so that the value for two years may be before the assessor. There should be about six columns for the total assessments for as many years. There should be a column for conveyances, one for mortgages, and a further column for remarks. The width of these columns is a matter of convenience based on experience.

GEOGRAPHICAL OR ALPHABETICAL ASSESSMENT ROLL.

In thirteen cities the assessors make up the assessment roll geographically either by lot and block system or consecutively along the streets. Thirty-two follow the alphabetical arrangement of the names of the owners of property in the city. As the assessment work must necessarily be done by proceeding consecutively along the streets, it would appear that thirteen cities have taken the easiest and most logical method of making the roll. All students of assessment work are agreed that a geographical assessment roll is the most logical. It makes comparison of assessments easier and tends to result in that equality which is the aim of all assessors.

UNIT SYSTEM.

Twenty-seven cities use the unit system in assessing lots; that is, the value per front foot in a given street is determined and then by simple mathematics the value of the various lots is determined by multiplying the width of the particular lot by the value of the front foot

unit. Two other cities also use this method to some extent. Four cities use the value of a square foot as the unit. The assessors of the other cities do not report any rule. Here again students of assessments agree that the unit system is the best plan, as it is the only one which admits of convenient comparison of values throughout the city.

LONG AND SHORT LOTS.

Eight cities of the State have lots of the uniform depth of one hundred feet, five either one hundred and thirty or one hundred and thirty-two feet; four, one hundred and twenty feet, and two, one hundred and fifty feet. Where these standard lots exist it is possible to use a rule for determining the value of lots which happen to be longer or shorter than standard by using a table worked out in percentages of standard size and computing the value of the longer or shorter lots by multiplying by the percentages. Fourteen cities use such a rule; two use the Hoffman-Neill rule; two use the Somers rule; one uses a combination of the various rules which was worked out after a consultation with the city engineer and members of the Board of Assessors; three cities have worked out special rules which fit local conditions, and three cities do not state what their rule is.

RECORDS OF THE SIZES OF BUILDINGS.

The assessors of six cities keep records of the sizes of buildings; thirty-eight do not. Your committee recommends to the assessors of the cities of the state that they employ a system which will furnish them with ready information in this particular as soon as feasible. All buildings should be measured and the sizes recorded in the field books. When the sizes are once accurately recorded it is not difficult to enter the size of new buildings as they may be erected. A card system by which all the details of each parcel are recorded on a separate card may be found very useful.

TRUE CONSIDERATION IN DEEDS.

In the determination of value, what can be a better guide than the knowledge of what is paid for property when sold? True, there are forced sales which do not indicate at all the true value, and there are at times reasons why one man in a peculiar situation may pay more than a property may be worth, but taking it by and large there cannot be a better indication of the value of property than what willing buyers, who do not have to buy, will pay, and what willing sellers, who do not have to sell, will take for property.

It is safe to say that the great bulk of the transfers comply with the last condition. These actual prices, however, are hidden from the assessor under the nominal figures "\$1 and other valuable considerations." The assessor is charged with the duty of determining the values of property and is precluded from the best information possible to guide him in his work.

In their suggestion for improvement in the system, seven cities want the true consideration in deeds or at least the information as to the actual consideration at the time of recording.

State legislation should be demanded making it possible for the assessors to have this "best of all" guide to values.

Objection has been raised to such a law on the ground that the assessor will be misled if he takes the true consideration in every case. The committee has faith that the intelligence and sound discretion of the assessors will lead them to ignore the exceptional cases and give due weight to the evidence furnished by the actual considerations for transfers.

The State Board of Tax Commissioners in their re-

port for 1911 has set forth very effectively the reasons for the requirement that true considerations be disclosed to the assessors. They said:

The cornerstone of the structure is a correct valuation by the local assessors. The general range of sales in a locality is the best evidence of value. If an assessor is not informed as to the range of sales, how can he properly make a valuation? The custom of late years has become so general of inserting nominal considerations in conveyances of real property that an examination of those conveyances is of practically no benefit to the assessor. He must rely either upon such rare documents as give the actual consideration, or upon hearsay in the community. This hearsay is often most unreliable, and frequently is more of a deception than a guide, as often fictitious considerations are inserted for the purpose of misleading prospective purchasers.

There are market quotations of stocks and bonds, grain and produce and a thousand other commodities, so that an appraiser of those kinds of property has some records on which to base his judgment, but there are no market quotations on local real estate, and the arduous duties of the local assessor are made more difficult by the necessity of working upon either insufficient or misleading information.

We earnestly recommend that a law be passed requiring the disclosing to local assessors of the actual consideration in any conveyance of real property, either at or before the time of recording. If necessary the assessor may be required to keep secret the amount of such consideration, if it is not disclosed by the conveyance itself.

The State Conference on Taxation held at Utica, January, 1911, adopted the following resolution unanimously:

Since the actual value of real property is the sum for which it will sell under ordinary circumstances, and since the best evidence of such value is the record of actual sales under ordinary circumstances,

RESOLVED, That the true consideration in every deed, mortgage and lease should be made known to the assessor before such deed, mortgage or lease is entitled to be recorded, and that the law should be amended to require such information.

SALARIES OF ASSESSORS.

The salaries of assessors should be commensurate with the importance and dignity of the office. The duties of an assessor in equalizing the burden of taxation on the owners of property requires painstaking effort and an exercise of intelligence and discretion that should adequately be compensated. It is coming to be recognized universally that the assessor should be required to give his entire time to the work and should be paid an annual salary sufficient to induce competent men to accept the office. The cities in New York, however, are not unlike those of other states in this respect. The salaries of assessors in the cities of New York range from three dollars per day and one hundred dollars per year up to five thousand dollars per year, excluding the City of New York. There are twenty-three cities where the salaries are not more than five hundred dollars per year, and in these cities the number of parcels of property to be appraised range from twenty-five hundred to eight thousand. Assessors from three of these cities say they should have more pay if the work is to be done properly. This should be taken up locally and the legislative authorities of the various cities should give their attention to the matter.

SHALL ASSESSORS BE ELECTED OR APPOINTED?

In twenty-six cities the assessors are elected. In fifteen cities they are appointed. In five cities some are elected and some are appointed. If assessors are to give their whole time to the work they should be secure in the tenure of the office so long as they perform satisfactory service.

They should be taken out of the political arena and your committee believes that the best way to accomplish this result would be by appointing the assessors during good behavior and not by electing them for a short term.

MEMPHIS REFUSE DISPOSAL.

By GINO PIEROTTI.*

Memphis owns and operates three garbage incinerators and the entire equipment used for collecting garbage and rubbish. For garbage collection purposes the city is now divided into three sections. Last year the garbage from the north division was taken to a McGuire incinerator and that from the south division to a Dixon incinerator. The new incinerator has been in service only since July 2d of this year.

During the year 1913 a total of 46,051 loads of garbage were hauled and cremated; 78,288 loads of ashes were collected and 2,491 loads of night soil were removed. In addition, 5,074 dogs were cremated. The expenditures during the year are shown by the accompanying table:

Expenditures on Garbage Collection and Incineration During 1913.

Items.	North Garbage Division, McGuire Plant.	South Garbage Division, Dixon Plant.
Salaries	\$24,507.25	\$26,422.75
Stationery and printing.....	28.76	67.80
Light	294.20	103.70
Fuel	1,430.52§	1,351.82§
Repairs to carts.....	346.16	363.41
Stable repairs	214.90	100.38
Live stock	2,225.00	1,420.00
Harness, etc.	36.75	.....
Repairs and plumbing.....	235.59	203.25
Tools and hardware.....	92.80	80.66
Disinfectants	224.57	146.50
Garbage carts .....	.....	98.34
Horseshoeing	916.00	1,132.25
Miscellaneous expense	344.71†	431.98†
Repair of auto truck.....	568.45	.....
Insurance on auto.....	190.40	.....
Repairs to crematory.....	295.30*	.....
Two lots for crematory.....	.....	5,000.00
Abstracts, etc. ....	.....	27.00
Totals	\$31,951.36	\$36,949.84
Loads of garbage cremated...	20,527	25,524
Average cost per load.....	\$1.56	\$1.45

*This amount was refunded by the bonding company. §Cost of fuel per load cremated, 6.97 cents for McGuire plant 5.30 cents for Dixon plant. †Largely for hire of extra mules. ‡\$165.50 of this insurance on incinerator.

The new incinerator is known as the Sparks patent. The plant consists of eight units, with a combined capacity of 50 tons of mixed garbage in 24 hours. It is constructed of brick lined with 9 inches of fire brick, has a steel front, reinforced concrete floors and is enclosed in a brick building. The units are separate, so that one may be repaired while the balance of the plant is in operation, and only as many units need be operated at a time as are necessary to consume the garbage delivered.

The plant was accepted by the city after a five days' test, during which it proved its capacity to destroy eighty tons of mixed garbage at an expense of 25 cents per ton, producing complete combustion at an average temperature of 1250 degrees. The ashes and clinkers were free from organic matter and odor.

The daily collection of garbage during July never reached the amount necessary for operating the entire plant, but averaged about 32 tons, which has been destroyed in four units. The labor required for the daily operation of these four units has been three men at \$2.00 per day, and the average daily consumption of fuel has been one ton and a half. Generally one ton of fuel is sufficient for operating four and even six units, but the additional half-ton was required by the great amount of melon rinds collected during July.

*Superintendent of Street Cleaning, Sprinkling and Garbage Collection.

DUST REMOVAL THE ONLY PREVENTION.

By CLARENCE D. POLLOCK.*

The most common way of attempting to prevent the dust nuisance is to sprinkle the pavements with water at more or less frequent intervals, thus turning the water to mud, which at least will not blow about. Oil is sometimes applied with good effect as a dust palliative. In addition, if a proper oil is used and in the right quantity, it adds to the life of old asphalt pavements where the "life" has gone out of the asphaltic cement in a large measure. In another case, that of old asphalt block pavements where the edges of the blocks have become "dead" and are beginning to crumble away, this method also helps, as the heavy oil fills the joints and adds very materially to the life of the pavement, as well as removes the small inequalities in the surface. The portion remaining on the surface of the blocks is worn off by the traffic after a time, but before this happens some of the oil has penetrated the blocks and added to their life; while the part that goes into the joints remains there and reinforces the edges of the blocks, provided the pavement is dry when the oil is applied. But oil tends to render bituminous surfaces too soft when applied in sufficient quantity to be really effective as a dust palliative, and with the exceptions above noted its application is of very questionable benefit.

As stated before, the usual method of preventing dust is by applying water frequently, and generally this simply transforms the dust into mud. It is hard to understand why so many municipalities do this. It would seem as though they considered it valuable material and must preserve it, and simply change its form so that it will not blow away. Some cities, however, use flushing machines and attempt to wash the dust into the gutters and then into the sewers or drains. Where the water is applied nearly parallel to the surface of the pavement, this method is pretty satisfactory, but if the water is applied under pressure in such a manner that it strikes the pavement, instead of the dirt, with too much force, it will wash out joints in block pavements and will find any weak spots in bituminous surfaces, and will do more harm than good.

The only sure and satisfactory way to prevent dust blowing about is to remove the dust and dirt from the pavements. And this can best be done by sweeping the pavements frequently. Hand sweeping is best in the day-time, because of traffic conditions, but this may be supplemented by machine sweeping at night to good advantage. The pavement should be sprinkled with water very lightly, just in advance of the sweeping, in order that the dust may not prove a nuisance during the process of sweeping.

This is the secret of dust prevention on city pavements, and not the common method of nursing the dust along as alternately dust and mud, and allowing it to remain forever on top of the pavement, never removing it.

MUNICIPAL LIGHTING PLANT NOTES.

The following items of information concerning lighting plants supplement that given in the August 27 issue:

Palo Alto, Cal., in addition to the rates given in the table, has a heating rate of 2 cents per kw. h.

Longmont, Colo., Ray Smith, superintendent, gives each resident free current for one 40-watt tungsten lamp for each porch directly facing a street; the object being to thus assist in lighting the streets. There are 550 of these free porch lights. In this city each power customer may install a demand meter at his own expense; the maximum continuous demand for a 15-minute period

determining the charge for any month. This city has a cooking rate of 3 cents for bills totaling under \$2.50 per month and 2 cents over that, with increasing use for this purpose; the object being to develop off-peak load. The power for creating current is obtained by placing waterwheels in the line of the city water mains, the power thus being obtained at practically no expense. The static head at the power house is 473 feet. The power house contains two 250 k. v. a. generators, each direct connected to 40 hp. Pelton waterwheels. The revenue from the plant in 1913 was \$25,959, of which \$18,535 was from lighting buildings, \$4,800 from street lights, \$1,654 from power, \$85.35 from cooking, and the balance miscellaneous. This gave an average revenue of 5.7 cents per kw. The expenses for the year were \$14,841, of which \$7,800 was interest and depreciation, \$4,088 generating and transmitting expenses and \$2,954 distribution system expenses.

BORAX TO PREVENT FLY BREEDING.

The United States Department of Agriculture reports that it has discovered a method of preventing the breeding of flies in horse manure, which does not offer the objections to its use which are attached to a number of other methods and substances. This is, in brief, that a small amount of ordinary borax sprinkled daily on the manure will effectively prevent the breeding of the typhoid or house fly. It is also stated that the same substance applied to garbage, refuse and other places where flies deposit their eggs will prevent these from hatching. It will not kill the adult fly or prevent the laying of eggs, but will prevent the hatching of the eggs.

Its advantages over other materials which have been suggested for this purpose are that borax is easily obtained and not expensive, and that if used in proper amounts it will not destroy the usefulness of the manure as a fertilizer. The investigators found that 0.62 of a pound of borax or 0.75 of a pound of calcined colemanite to 8 bushels of horse manure would kill the maggots and prevent all of the flies generally breeding in manure from developing. The investigators are not sure that large quantities of borax would not be injurious to crops, and recommend that not more than 15 tons of manure treated with .62 pound of borax per eight bushels of manure should be applied per acre of field. The method of using the substance in stables is to sprinkle the borax or colemanite in the quantities named around the edges of the piles of manure, using a flour sifter or other fine sieve for this purpose. The manure should then be sprinkled immediately with two or three gallons of water to each eight bushels. A little of the borax should be sprinkled on the manure daily as additional quantities are added in order to prevent the hatching of eggs which are presumably being laid more or less continuously. As the fly maggots congregate at the outer edge of the manure pile, most of the borax should be sprinkled there.

In case of garbage cans or refuse piles, 2 ounces of borax or calcined colemanite costing from 5 cents a pound upward according to the quantity purchased, will effectually prevent flies from breeding. Borax is not a very poisonous substance, and the feeding of garbage that contains it to hogs is not likely to be a serious matter; but in large quantities it does produce gastric disturbances, and for this reason a certain amount of care is advisable.

Borax is readily available in all parts of the country, is comparatively non-poisonous and non-inflammable, is readily soluble in water and easy to handle. It can be purchased at retail for 10 cents per pound, and a single pound in a garbage pail may prevent the breeding of hundreds of dangerous flies.

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CHANGE OF ADDRESS

Subscribers are requested to notify us of changes of address, giving both old and new addresses.

Contributions suitable for this paper either in the form of special articles or of letters discussing municipal matters, are invited and paid for.

Subscribers desiring information concerning municipal matters are requested to call upon MUNICIPAL JOURNAL, which has unusual facilities for furnishing the same, and will do so gladly and without cost.

SEPTEMBER 10, 1914.

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Removal of Street Dirt.

In an article on another page, written by a street cleaning official, the statement is made that catch basins should be cleaned by the city engineer's department because "that department installs all streets basins and should have the cleaning of same."

The reason we cannot accept as a good one, nor do we think the practice is generally to be recommended, although it may be advisable in this particular instance for other reasons of which we are ignorant. The assumption appears to be made that the several city departments are as independent as separate public service corporations, for instance, and each should therefore be entirely responsible for the up-keep of the property which it uses.

There is too much of this feeling in municipal departments, and too little of unification of the public house-keeping so as to attain maximum economy. All paving repairs should be attended to by the paving department, whether due to ordinary wear or to cuts made by water or sewer departments, or even by private corporations; for that department is best equipped with material and skill for this work. For the same reason all removal of street dirt should be performed by the street cleaning department, which has the teams and men for this

class of work. It is true that in a large city there is generally and advisably a gang or gangs whose sole function is cleaning basins; but the engineer's department seldom employs teams or this class of labor, while the street cleaning department does, and maintains stables, repair shops and dumps necessary for this class of work, and should therefore be able to supervise the work more economically. The engineer's department is organized for designing, construction and repair, a class of work which is essentially distinct from dirt removal. It is true that the practical bent of the engineering mind is often found to obtain the best results when placed in charge of such work, but the two classes of work are entirely distinct.

Even if the responsibility for catch basin dirt is considered, the answer would seem to be the same, for this dirt is washed in from the streets—sometimes deliberately thrown in by the street cleaner, often flushed in by street flushing machines. But the decisive question should be—in this and other municipal services—how can the maximum efficiency and economy be secured? And an increasing number of cities find the answer in the combining in one department of the removal of all refuse—ashes and garbage, and even dirt from the sidewalks, as well as that from the roadways.

Preventing Street Dirt.

Not to "lay the dust" with water or oil, but to remove it altogether is the way to prevent the dust nuisance, is the statement made in an article on another page. Can we not go a step further and prevent its deposit on the streets? Not altogether, of course, especially while we have horse-drawn traffic; but store keepers litter them with sweepings and packing materials, pedestrians with papers, fruit skins, cigarette boxes, etc., broken and overloaded carts leave trails of dirt, sand and various materials along their routes, and householders throw everything into the streets, from garbage to old mattresses.

All this is against city ordinances—in most cities, at least—and should be prevented. In the most advanced of European cities it is prevented. To break the littering habit where it is fixed would undoubtedly be difficult, but once broken it should be comparatively easy to prevent its recurrence. A dirty street invites more litter, but only the comparatively few shiftless and generally undesirable citizens will deliberately litter up a clean one. A good start would be made if every firm be held strictly responsible for dirt dropped by its wagons, and every store for sweepings or other litter thrown from it into the street, and if trash cans be placed at frequent intervals in the business section for the receipt of papers, fruit skins and other matters which pedestrians might wish to throw away.

Grafting Dangerous in Fort Worth.

The city administration of Fort Worth is apparently doing its best to eliminate graft among the municipal employees, if we may judge from the following, which we find printed on the back of a check just received. We presume the same notice is made public in numerous other ways also.

A reward of one hundred dollars will be paid by the city of Fort Worth to any person who can and will furnish proof that any city employe has been guilty of grafting, while holding such employment. The name of such informant will, in no case, be divulged.

The city government pays good salaries and, in return, expects and insists upon good service, which it is now getting. Neither the mayor nor any city commissioner is aware of any grafting; however, there is talk the world over about graft in municipal work, and if there are any grafters connected with the city of Fort Worth, the city commissioners would like to know it. The offenders will not only be removed from the city pay rolls, but they will be prosecuted to the full extent of the law.

The WEEK'S NEWS

Lynn (Mass.) Breaks Her Paving Record—Springfield (Mass.) to Stop Electrolysis—Street Lighting Experiments to be Made in Bombay—Augusta Accepts Gamewell Alarm System—Using Smoke Helmets in Newburgh (N. Y.)—City Officials to Meet in San Francisco—Central Purchasing Agency Wanted for New York.

ROADS AND PAVEMENTS

Safety Street Crossing Scheme.

Portland, Ore.—Portland walked the chalk line when the city department of public works painted its first new "safety first" arrangement at a busy street corner. The arrangements consisted of six inch chalk lines across the sidewalk. Persons crossing the street were prohibited by three policemen from getting out of the lines. That the arrangement was a success is the declaration of H. W. Holmes, chief of the city bureau of highways and bridges, who had traffic observations taken during the day. On an ordinary day traffic studies show a total of 22 per cent of the pedestrian traffic cuts corners or walks diagonally over the intersection. Under this new system this 22 per cent was cut down 93.7 per cent, leaving but a small centage of the entire traffic of the day which violated the rules of the road. For the day there were three policemen at the intersection. One stood in the center of the street and two on the curbs. The officer in the center refused to answer questions, devoting all his attention to directing vehicular traffic. The others were kept busy keeping pedestrians inside the chalk line and answering questions. The plan was considered such a success that it will be tried at other intersections. A fresh coat of paint will be put on every night.

California to Investigate Mountain Boulevards.

Sacramento, Cal.—A trip of several weeks over the roads and highways of the mountain counties of northern and central California is planned by the members of the California Highway Commission with a view of determining their attitude on extending the state highway system to mountain boulevards. The commission believes that further effort will be made to extend the highways after the

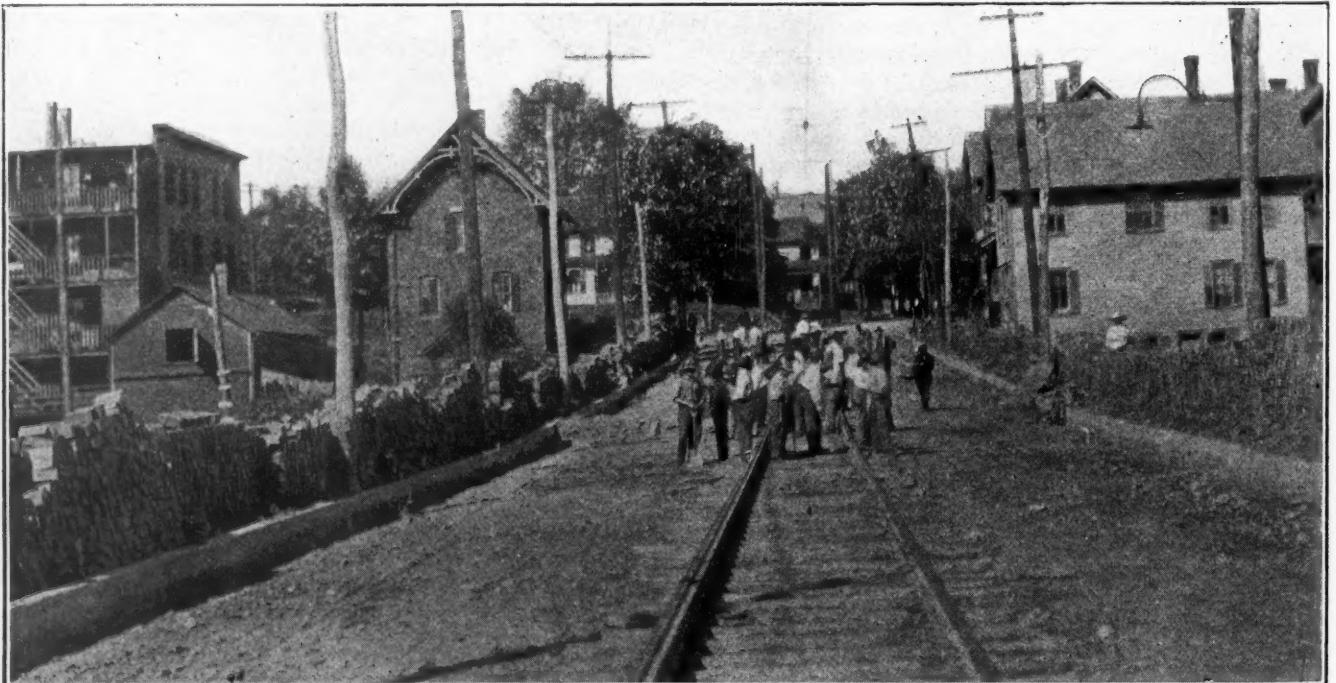
present \$18,000,000 bond issue is exhausted. The trip will be made to determine the value of a system of mountain highways with laterals connecting them with the main trunk lines of the present highway system.

Arizona to Stop Convict Labor.

Bisbee, Ariz.—In order to afford a means of livelihood to a part of Arizona's unemployed citizens, convict labor on the Tombstone-Bisbee highway is likely to be abolished, following a suggestion of Governor Hunt to the board of supervisors of Cochise County. The governor's plan has met with the hearty endorsement of the business men of Bisbee-Warren district. At present between seventy and eighty convicts are being employed between Tombstone and Bisbee. The governor's plan is to return these men to the penitentiary, and to supplant them with workmen who are at present out of employment owing to the curtailment of operations in the mining industry. It is not likely that any action will be taken by the state engineer until the approval of the county authorities has been given. Governor Hunt also has written to the board of supervisors of Greenlee County asking that the new road work which is about to be commenced there be done by day labor, in order to afford employment to miners who are temporarily out of work. One hundred and fifty men are to be hired for road work here and many more given work at other places.

New Assessment Rule for Sidewalks.

Haverhill, Mass.—A definite method of procedure will be determined by the city council in regard to applications by property owners for granolithic sidewalks where the abutters are allowed a per cent of the cost by the city in the future. It has been the custom for the city to allow 35 cents per square yard on the cost of the grano-



Courtesy Binghamton (N. Y.) Press.

GRADING AND ADJUSTING TRACKS FOR NEW PAVEMENT IN BINGHAMTON, N. Y.

lithic walks, where there have been sidewalks previously laid and where the edgestones and cobble gutters have been installed. There have been occasions when petitions have been received for granolithic walks, the city to share the expense, where the edgestones and cobble gutters are already laid and the city has had no definite regulation in dealing with these petitions, some of them having been granted and others held up.

Use Portable Plant for Asphaltic Concrete Paving.

Hanover, Pa.—The portable Warrenite plant, weighing 50,000 pounds, for the manufacture of the asphaltic mixture, which will be put on York street, has been erected on the Commons and started operations. The mixture to be used on York street is asphaltic concrete. This mixture contains sand and stone through an inch screen, together with the mineral aggregate, all of which is heated in kettles apart from the plant. There are two kettles, each having a capacity of 35 barrels. The mixture is turned into the drum of the mixing plant, which has a capacity of turning out from 75 to 100 tons a day. After this it is hauled in ordinary drop-bottom wagons to the street, where it is spread and rolled, and then sealed on top with a mixture of asphaltic cement. There are 25 men engaged at the plant and 15 on the street, spreading the mixture. The mixture is put on the street while hot, being at a temperature of 275 to 285 degrees when it leaves the plant. Nine hundred square yards pavement are being laid on an average in a day.

Lynn Breaks Paving Record.

Lynn, Mass.—Street improvements in Lynn this year will break all records in the history of the city in regard to area. Street Commissioner McPhetres will have laid, by the time the frost sets in, 80,000 square yards of smooth cement paving, in addition to about 20,000 square yards of granolithic sidewalk with curbs. Under the old form of government 10,000 square yards a year was considered a good accomplishment. Commissioner McPhetres, upon assuming office, found that he could lay cement pavement with his own crew cheaper than he could let it out by contract. The cheapest a similar pavement was ever received by contract was at \$1.70 per square yard, and the average was about \$1.77. By doing the work himself he is getting the pavement at an average of \$1.27 per square yard. He has a full equipment for the work and mixes his cement on the scene of construction. The paving is 8 inches deep, and is made of one part of cement to two parts of sand and four of crushed stone. This is laid on a sub-grade which is firmly rolled with a steam roller.

Pasadena Plans to Do Own Paving.

Pasadena, Cal.—Commissioner T. D. Allin is giving serious thought to the question of having the city do its own paving. "The greatest difficulty in the way," said Commissioner Allin, "is found in the fact that paving work bunches. People want the work done when they want it, and that would be the biggest problem were the city doing the work. In no case would it be wise for the city to attempt to do grading. The city could not afford to keep the horses and wagons on hand which would be needed when a big job was under way and which would be idle when grading was light. Grading contractors work their outfits wherever they can find work, but the city would not want to be hunting jobs outside its limits when work at home was slack." Commissioner Allin points out that the city is doing more and more of its own street work and has recently installed an asphalt patching outfit to take care of repair jobs which, formerly, it was necessary to leave until there was some larger asphalt job to be done when the contractor's machines were diverted all over the city to fix up long pending repairs. Included in the general plan to have paving made a strictly municipal matter would be the acquirement of a rock crusher. At present the city furnishes road oil properly treated to all contractors at a uniform price. This has greatly improved the quality of oiled work here. Oil is obtained from the municipal oil pit.

Decide on Creosoted Wood Block.

Sioux Falls, S. D.—The difference which have existed between the city commissioners and the Sioux Falls Traction Company ever since the city determined to pave Phillips avenue with creosoted block has finally been

amicably adjusted. The commissioners wanted the car track on Phillips avenue placed in the center of the street, and they also wanted the space between the car rails and one foot on each side paved with the same material as the remainder of the street. President Mills of the Traction Company objected to placing the track in the middle of the street and also insisted that creosoted block was not a suitable pavement for use between the rails and wanted to substitute jasper block. It was decided to have the track moved to the center of the street and the commissioners will permit the use of concrete between the rails and one foot on each side.

Lay Four Carloads of Wood Block.

Lebanon, Pa.—Four Carloads of wood block paving material, shipped by the United States Wood Preserving Company from its plant in the South for the Franklin Construction Company, have arrived in this city. The Franklin company is now in a position to place the wood block as soon as the concrete foundation is down.

SEWERAGE AND SANITATION

Ordered to Stop Polluting Delaware River.

Phillipsburg, N. J.—The decision of Chancellor Walker in granting an injunction to prevent Phillipsburg from sewerage into the Delaware River and from emptying its garbage and refuse into the stream is the strongest support the State Board of Health has yet obtained in its campaign to render the waters of the Delaware River unpolluted and good for drinking purposes. This decision will now be followed by a general order to "clean up" all along the river, and cities and towns on the Jersey side at least must stop sewerage into the river and erect sewage disposal plants.

Typhoid in Two Townships.

Norristown, Pa.—Dr. H. H. Whitcomb, representing the State Health Department in this county, is, with the assistance of Charles E. White, local registrar of vital statistics, trying to find the source of an outbreak of typhoid fever in Worcester and Skippack Townships, about 10 miles to the north of Norristown. There are more than a score of persons down with the disease. The health authorities attribute the disease to milk.

WATER SUPPLY

Report on Electrolytic Action.

Springfield, Mass.—The movement to stay the decay in the city's system of water pipes as well as in the underground conveyors of every other public service corporation is now well started. The government engineers who surveyed the city carefully last month report that, while the situation here is not acute, yet underground structures, including the biggest water mains in the central part of the city, are suffering, and are already badly pitted. The damage already done is caused by uncontrolled currents of electricity flowing away from the tracks of the street railway company, running along any pipes of metal they have encountered and corroding the metal wherever they were deflected. The method of furnishing the power to the system and of handling the return flow must be changed, principally by the installation of several substations distributed around the city instead of the one main plant, according to the opinion of Dr. E. B. Rosa, acting director, and Burton McCollom, assistant physicist for the United States bureau of standards. They are the men who directed the survey, which required the services of several men during most of July. The survey was made at the request of the public service associates of the city, most of whom felt they were suffering from the electrolytic action of the street railway company's current.

J. Torr Harmer, president of the company, said the recommendations of the engineers if carried out would mean a large initial expenditure by the company in the building of the subpower stations and the other reorganization of the system. The question of who should bear this expense is now being debated, though it is understood that in the

beginning it was agreed that if all the other corporations paid for the survey the railway company would ask for no help in putting the recommendations into effect, so far as its system was concerned. The report states that the company stands to win in the long run by a considerable saving in operating expense. E. E. Lochridge, chief engineer of the water department, said that he did not consider the condition of the water mains to be serious at present. None of them will have to be replaced at once, even though some are pitted deeply. By the measurements of potential differences between street railway returns and fire hydrants, the investigators found "some rather bad conditions" to exist in Indian Orchard and Chicopee, and especially in Chicopee Falls. Judging from the situation as they found it, the engineers concluded there must be some metallic connection between underground pipes and the railway negative return, but the engineers of none of the corporations knew of any. The government men finally unearthed an uncharted connection under a house near the railway power plant, where two copper wires were found to be taking from 100 to 250 amperes from a water pipe.

The fact that the experts found electrolysis to be going on steadily in various parts of the city, and that they recommended remedial measures at the earliest practicable date has stimulated the corporations to swift action. What they hope will happen is that the board of trade or some other central organization will take the matter up in an attempt to bring the railway company and the other utilities together, so that something may be done to stop the ravages of electrolysis, and that the work may be accomplished on a basis satisfactory to everybody concerned. The vital interest which the city has in the matter through the damage to the water system, may prompt the city government to act.

First Year of Pasadena's Municipal Water.

Pasadena, Cal.—Commissioner Salisbury has been authorized by his fellow commissioners to have the first annual report for the city water department issued in pamphlet form. A condensed summary of the report follows:

Income and Expense Account.

Total water revenue for year.....	\$238,012.93
All other receipts.....	12,337.71
	<hr/> \$250,350.64
Operation and maintenance expense...	\$74,050.30
Interest on bond issues, etc.....	56,303.33
Ordinary depreciation for the year...	41,090.75
Extraordinary losses from abandonment of mains and sales of obsolete and discarded property, etc.....	13,581.62
	<hr/> \$185,026.00
Gross surplus for the year.....	\$ 65,324.64
Deduct reserve appropriated for bond redemption..	10,000.00
	<hr/> \$ 55,324.64
Add surplus from previous year.....	19,555.26
Total surplus as at June 30, 1914.....	<hr/> \$ 74,879.90

Balance Sheet.

Assets—	
Water value	\$ 158,500.00
Real estate	298,895.81
Water collecting properties	120,883.75
Pumping system properties	111,316.37
Distribution system properties.....	638,370.89
Equipment—departmental	16,051.74
	<hr/> \$1,344,018.56
Total fixed capital.....	
Cash available for operation.....	5,176.01
Cash in reserve funds for bond interest and bond redemption	34,062.50
Accounts receivable	24,553.76
Prepaid insurance	508.12
Material and supplies on hand.....	12,807.33
	<hr/> \$1,421,126.28
Liabilities—	
Bond issue, 1912.....	\$1,250,000.00
Due city general fund.....	44,100.00
Balance due on Franklin wells.....	15,000.00
Water bills prepaid in cash and extensions.....	1,718.23
Reserves for bond redemption and interest.....	34,062.50
Other reserves	1,365.65
Free surplus	74,879.90
	<hr/> \$1,421,126.28

In the year just ended it required 31 per cent. of the water revenue to pay operating and maintenance expense, and 23½ per cent. of the revenue to pay interest on bonds. Besides which depreciation, ordinary and extraordinary,

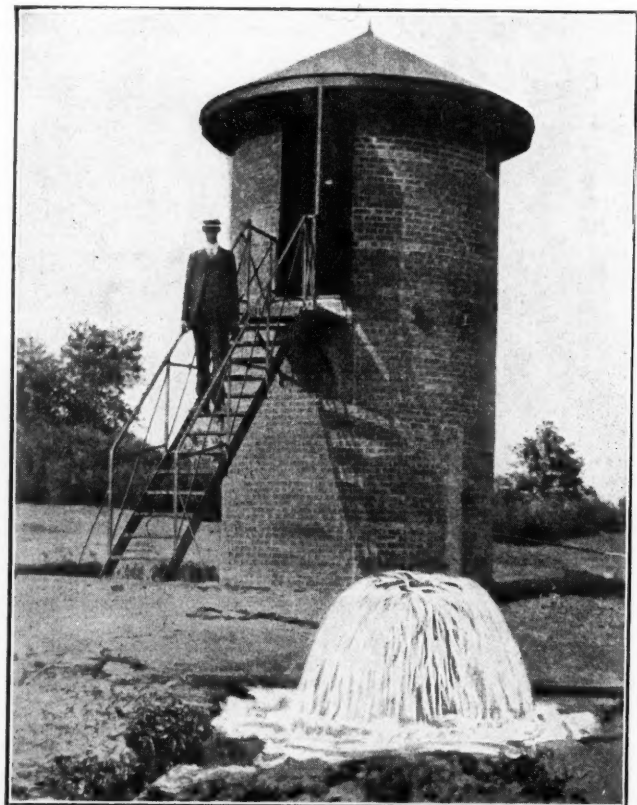
absorbed 23 per cent. more of the water revenue for the past year, leaving only 22½ per cent. as a net surplus, from which has to be also provided the annual appropriation of \$10,000 for bond redemption. During the year 127,638 water bills were collected, at an average cost of 4 4/5 cents per bill. This covers all postage on notices and receipts, collectors' and cashiers' salaries, accounting collections and correspondence expense. Four hundred and ninety-eight active services were installed during the year, and the total number of live services at June 30, 1914, was 11,317, including irrigation.

Enjoins City From Delivering Impure Water.

Los Angeles, Cal.—Suit has been instituted in the Superior Court to enjoin the city from turning into the public mains the water supply of the Owens River aqueduct, a work on which the city has spent close to \$30,000,000. The suit was filed by Henry A. Hart, a former member of the Aqueduct Investigating Board, who alleges that the water is unfit for use, a contention supported by a statement from a bacteriologist, Dr. Ethel Leonard. City officials were cited into court to show cause why a temporary injunction should not be granted. They declared there was no merit in the case, which, it was declared, was fostered by interests that had fought the aqueduct project from its inception.

Inspect Springfield's Drive Well System.

Springfield, Ill.—Members of the City Commission have made a trip of inspection of the river pumping station with Commissioner Spaulding, who demonstrated the actual operation and ability of the present water plant to provide a sure and adequate supply of water, pumped from a system of drive wells. The drive well system was begun in the fall of 1912. There are now five sub-stations in operation, each having a capacity of approximately 1,500,000 gallons per 24 hours. There are two stations yet to be located be-



Courtesy Illinois State Register.

A SUBSTATION IN SPRINGFIELD'S WELL SYSTEM.

fore the plan is completed. With these two additional substations in operation it is estimated that there will be a surplus of nearly 100 per cent in excess of the average daily pumpage. Only enough sub-stations are to be operated to

supply the water actually needed. As the demand increases, sub-stations that are idle are started by throwing an electric switch. Mr. Spaulding stated that all doubt as to the success of the drive well system has now been removed, and that the extreme drouth and heat of this summer has been a thorough test, and that double the quantity could be secured by extending the well system to new areas a greater distance from the plant. The illustration shows sub-station No. 4, which has a capacity of 1,500,000 gallons per day.

STREET LIGHTING AND POWER

New Lighting Contract Effects Large Saving.

Springfield, Mass.—A little saving of something like a quarter of a million dollars in the city's lighting bill for the next 10 years is anticipated by William E. Hodge, Deputy Superintendent of Street Lighting, as a result of the new contract made three months ago with the United Electric Light Company. Under the new system of prices the city pays \$70 a light each year, instead of the old rate of \$83.41, and gets almost twice as much illumination per lamp because of a new type of magnetic arc now being installed. Also there is to be a distinct cutting of the lighting bill for the school houses and public buildings due to the new system of proper and economic illumination which Mr. Hodge has been developing for six weeks.

Bombay Experiments with Street Lighting.

Bombay, India.—The municipality of Bombay has decided upon the plan of making practical tests as to the relative merits of gas and electricity for street lighting in this city. The city at present is lighted partly by oil lamps and partly by gas lamps. There are many complaints of inadequate lighting of some of the streets, especially those where oil lamps are used. The experiments, which are to start within a few months, or as soon as necessary installations can be completed on a few main streets now very poorly lighted by oil, will demonstrate the comparative possibilities of the two methods of illumination by gas and by electricity under practically identical conditions. In certain cases experiments will be conducted side by side in the same street, so as to render comparisons easy. The commissioner of the municipality has arranged with the Bombay Electric Supply & Tramways Co. and the Bombay Gas Co. to carry out experiments with the following standards of light:

Width of streets.	Candle-power.	Distance from lamp to lamp, feet.	Arrangement of lamps.
100 feet.....	1,500	240	} Stagger.
80 feet.....	1,000	200	
60 feet.....	160	120	
40 feet.....	80	100	Line of curb.

The two companies interested in gas and electricity, respectively, are prepared to undertake the installation at their own risk and cost, provided that if their installation is eventually accepted the municipality will make due payment for it, and also enter into lighting contracts for a period of at least 15 years.

FIRE AND POLICE

Charge for Use of Apparatus Outside City Limits.

Elizabeth, N. J.—For the use of the city's fire apparatus outside the city limits a charge of \$50 an hour will be made, according to a resolution adopted recently by the unanimous vote of the fire commissioners. Following is the report adopted: "When a call for apparatus comes from out of the city the chief of the fire department is hereby empowered (when in his discretion such apparatus can be spared outside the city limits) to send such apparatus as he may select and to arrange at the same time to cover the district from which such apparatus be taken by other city apparatus. Such apparatus, however, is not to be sent out of the city, except upon the request of the mayor, borough president, or some competent person's order, and with the understanding that a charge is to be made of \$50 per hour for each apparatus so sent out, and

which latter charge they will guarantee payment of. The only exception to the above rule to be in case of a conflagration, when aid may be called for by a neighboring city or borough, and in such case no charge is to be made."

The contract for furnishing three pieces of motor fire apparatus—a triple combination pumping engine, a combination pumping engine and a combination hose wagon—has been awarded to the Seagrave Co., of Columbus, Ohio. The cost is \$22,500.

Augusta Accepts Alarm System.

Augusta, Ga.—The new Gamewell police and fire alarm telegraph system, recently installed for the Augusta police department, has been officially accepted by the police committee of city council. A splendid test was made showing how the switchboard operator at the barracks has the entire police detail at his finger tips. Composing the committee were Messrs. T. W. Pilcher, chairman; Harry Jones, William Martin and Mayor L. C. Hayne. Others who were present at the test were Chief of Police George T. Elliott, Captain Grubb and Superintendent W. C. Davenport, of the police and fire alarm telegraphy. Test calls were sent in all over the city, and on each occasion they were answered in less than three minutes' time. In accepting the new system Chairman Pilcher, of the council committee, said: "I think it will do more to reduce crime in Augusta than twenty-five extra policemen, and I think, too, it is the finest apparatus of the kind ever installed in the city of Augusta." Mayor L. C. Hayne, after watching the system thoroughly tested, said: "That it is one of the greatest facilities that could have been added to the police department."

New Fire and Police Station.

Winchester, Mass.—Plans have been accepted and contract let by the town of Winchester for a new building designed to house both Fire and Police Departments. The architect is Edward R. Wait of Boston and Portland. In many respects, this new building will be unique as a structure designed for such a purpose. In the first place its architecture departs from the usual type in favor of a colonial type designed to be part of a village group, set amid the trees and lawns of a suburban center, instead of the plain, utilitarian style customarily associated with fire and police stations. The special town building committee in charge of the work, as well as the architect, had



WINCHESTER (MASS.) NEW FIRE AND POLICE STATION.

in mind the rational development of the Town Center along artistic lines in the planning of this building. For the exterior, colonial red brick will be used, with artificial stone trimmings. The belfry, one of the most striking features of the building, will be of copper and white woodwork. The Fire and Police Departments, although both under one roof and served by the same heating plant, will be sep-

arated by brick fire wall. The main apparatus room, opening on Mount Vernon street through three large doors, has a clear space 50x60 feet without posts or pillars of any kind. Dormitories and other accommodations have been provided to care for additions to the force for a number of years. Construction will begin at once and the building is expected to be complete before spring. The contract for erection has been let to Frederick C. Alexander of Winchester. The Town Building Committee consists of Elbridge K. Jewett, Roland E. Simmons, J. Herbert Dwinell, Vincent Farnsworth and Frank W. Reynolds.

Install New Fire Alarm System.

Kinston, N. C.—Work has been commenced on the installation of a Gamewell fire alarm telegraph system here. The apparatus, which includes switchboards and indicators and the necessary gongs in two stations, boxes and wire, will be in operation inside of two weeks, it is expected.

Smoke Helmet Used at Newburgh Fire.

Newburgh, N. Y.—At a recent fire in Beacon, which began in a local warehouse, the firemen and city officials were given a splendid opportunity to test the efficiency of the smoke helmet. We have reproduced here a picture of the smoking warehouse, which, as the fire progressed



Courtesy Newburgh (N. Y.) News.

NEWBURGH WAREHOUSE BURNING.

and the smoke became denser, would have defied entrance to the men. With his head covered by the helmet, as shown in the second illustration, one of the firemen entered the burning building, carrying a hose, and played a strong stream of water on the fire. In a short time the fire was quenched and much valuable property saved.

GOVERNMENT AND FINANCE

National Conference of Mayors for San Francisco.

New York, N. Y.—As chairman of a committee of Mayors of New York State to arrange for a national conference of Mayors at San Francisco during the Panama Exposition next summer, Mayor Mitchel has sent a letter to the chief executives of the principal cities of the United States, asking for co-operation in making the proposed national conference a success. Mayor Mitchel's letter to the other chief executives says that Mayor James Rolph, Jr., of San Francisco, and Mayor Frank K. Mott of Oakland, Cal., have approved the proposed conference and extended the hospitality of their respective cities. Mayor Mitchel asks the other mayors to express their feelings in regard to the proposed conference. He suggests that mayors from different sections of the country get together and act as a committee to make arrangements for the conference.

"Should it be decided to hold the proposed conference," Mayor Mitchel says, "it has been suggested that it continue for three or four days, in from five to seven sessions. At each morning session one topic of interest to all municipalities might be presented briefly by the best known expert that could be secured, and, following the paper, an opportunity given for free discussion."

City Manager for Bristol, Va.

Bristol, Va.—The City Council of Bristol, Va., is to elect a city business manager at a special meeting to be held. It is now practically certain that the Council will go out-

side the city to secure a man, as it was agreed sometime ago when the plan was being discussed that this would be preferable. The title of the new officer will be "Executive Manager," and his salary will be about \$2,500 per year. He will have complete charge of the street, water and engineering departments, employ all labor, make all purchases, supervise all construction and look after the interests of the city generally, under the supervision of the City Council.

Somers System in Texas.

San Angelo, Tex.—Wm. Young, of Cleveland, representing the Somers system of taxation, is in San Angelo conferring with city officials regarding the installing of the system. Six Texas cities are now operating under the Somers system according to Mr. Young. Houston, Galveston, Beaumont and Waco have been under the plan for some time, while Corpus Christi and San Antonio have just adopted the system.

STREET CLEANING AND REFUSE DISPOSAL

Garbage Incinerator Asked for Coffeyville.

Coffeyville, Kan.—City Engineer A. Gillam has recently returned from a trip to San Francisco, where he witnessed the operation of the incineration plant built on the Presidio. Of the Nye Garbage incinerator type, it consumes thirty-two tons of garbage every twenty-five hours with the use of a gallon of crude oil an hour as fuel. To the mayor and city commissioners, the city engineer recommended the incinerator as a means of consuming all garbage without creating any nuisance.

Schenectady's Garbage Plant Successful.

Schenectady, N. Y.—The new garbage reduction plant with Superintendent Thomas H. Welch in charge, has commenced operation.

The maximum capacity for disposing of garbage is 50 tons a day, but the average amount it is expected it will be necessary to handle is about 30 tons. Twelve loads were received the first day. Only separated garbage will be received. About eight tons of garbage were cooked in two of the digestors, but none of it had time to complete the various processes before the plant was closed, so a complete test was not really made. On the second day the reduction plant received about 14 loads of garbage. About eight tons were cooked, as the garbage was still found to be partly mixed with rubbish such as tin cans, broken bottles, paper and other refuse. The scales for weighing the garbage and various products at the plant are not yet ready, so it was not possible to tell exactly the proportion of these which will be turned out. It is figured for every ton of garbage which goes through the plant about



Courtesy Newburgh (N. Y.) News.

READY WITH SMOKE HELMET.

19 per cent of grease and about 27 per cent of fertilizer is fried out and the rest is destroyed in the process, being burned up and going up the chimneys as smoke. About 2,000 to 2,500 gallons of gasoline were necessary to start

the plant, but this is used over and over, so it is calculated 8,000 gallons will last a year. Each tank full in the percolator received from three to five washings and from three to seven gallons of gasoline are used to a washing. A washing takes from two to three hours.

Begin Work on Incinerator.

Roanoke, Va.—The site for the garbage incinerator recently contracted for by the city, has been cleared and actual work of constructing the incinerating plant awaits completion of plans and shipment of material by the Decarie Incinerator Company, Minneapolis, Minn. The erection of the plant will be under the supervision of City Engineer Gibboney for the city. It is hoped to have garbage burning early in the winter.

RAPID TRANSIT

Free Street Car Riding.

Boston, Mass.—The public service commission has issued instructions to the street railway companies of the State as well as to the railroad companies, outlining in a general way for what purposes they could grant free or reduced transportation rates. Up to last year the companies had a free-hand in such matters, but now no concessions can be made without the approval of the State board. While the board is inclined to allow excursion rates for charitable purposes, they are attempting to draw a line that will shut out pleasure parties.

In these instructions issued the board says the words "charitable purposes" are capable of broad construction. Churches, religious organizations, schools and colleges are all public charities within the meaning of the law. There are special statutes providing for reduced rates for school children. In the judgment of the commission it would not be consistent with the public interest to permit common carriers to grant free or reduced rate service for any and all kinds of religious and educational institutions. Rather should the operation of this exception to the general prohibition be limited to needy classes,—such as the inmates of hospitals, or homes for the aged, or orphans' homes, of day nurseries, to such enterprises as mothers' outings and other similar undertakings supported by benevolent and charitable societies and intended for the relief of suffering or to furnish opportunities for health to needy children and women and to others unable from their own resources to provide the requisite opportunities. Trips for school children, perhaps to visit the State House, Sunday school picnics, outings of athletic associations and clubs and other similar purposes, which are mainly for pleasure and not intended, primarily, to relieve any real suffering or need, are not, in the judgment of the commission, charitable purposes to which the carriers ought to contribute by granting free or reduced rate service not available to the general public.

Traction Fight in Gary.

Gary, Ind.—This city faces a traction struggle, the common council having published a notice that the Gary & Interurban Railroad Company must now give its passengers a 3-cent fare, selling eight tickets for 25 cents. It is expected the company will resist the order and eject those who are advised to pay no fare if they cannot get eight tickets for 25 cents. W. F. Hodges, city attorney, has been instructed to take any legal action against the company that may be necessary. The council bases its authority for the order on the traction franchise granted in 1907 to Frank N. Gavit, of Whiting, state senator, now president of the traction company. Gavit offered a 3-cent fare five years after his line was in operation. Cars began running in May, 1908, but in May, 1913, Gavit said he construed his grant to mean that certain strikes and delays gave him an extension until August 15, 1914. He received the benefit of the doubt, but on August 15 no 3-cent fare was forthcoming. Gavit has at various times tried to be released from the 3-cent fare clause, promising other considerations in return. For five years the company has sold 3-cent workmen's tickets, good during the morning and evening rush hours. Officers of the company, however, say that a general 3-cent fare will be disastrous to the revenues of the company.

New Municipal Line Opened.

San Francisco, Cal.—Amid much celebrating, the 3½-mile new Van Ness avenue municipal car line has been opened. Mayor Rolph made a short address from the rear platform of the first car, after which he reached up to the bell cord and officially started the three-minute service on the avenue. Seventeen cars were put in use the first day, 6 of them running the full length of Van Ness avenue and the other 11 running from the ferry to Geary street and Van Ness avenue, thence to the exposition grounds.

MISCELLANEOUS

Improvements in Hartford, Conn.

Hartford, Conn.—In the report of the city engineering department for the year ending March 31, submitted to the Court of Common Council, attention is called to the completion and successful operation of the new east side pumping station. The total yardage of improved pavement laid during the year was given as follows: Granite block, 2,108.7 square yards; sheet asphalt, 9,589.89 square yards, or a total of 11,698.59 square yards of pavement. There were 13,183 square yards of resurfacing at a cost to the city of \$18,641.18. There were 2,750 square yards of sheet asphalt used in making repairs, and \$7,251.51 was spent for repairs to improved pavement streets. Satisfactory progress was reported in the placing of wires underground, but the lack of progress in the elimination of railroad grade crossings was deplored. The isle of safety on State street, says the report, has proven of much convenience. A number of additions to the table of street elevations are reported.

Bonding of Contracts.

Erie, Pa.—Contractors who bid for city work have come to an agreement with council on the question of bonds. An ordinance now passed by council provides for an increase in the retention which the city will hold back from moneys due contractors, until the work is proved to have been done in compliance with terms of contract. The maintenance clause will be struck out. In the future, council will retain twelve cents for every square yard of work done for a period of five years. When this time has passed, the money will be given to the contractor with interest, providing the work has proved satisfactory.

Councils Have No Contract Power.

Columbus, O.—Boards of Public Affairs and not councils in villages must make contracts for public works. Attorney General T. S. Hogan said in an opinion to Prosecuting Attorney James J. Weadock, of Allen county. This will settle a dispute between the council and Board of Public Affairs in the village of Spencerville, Allen county, over the contracts for construction of a \$10,000 electric light plant.

Interurban Conference on City Planning.

Newark, N. J.—The third meeting of the interurban conference on city planning was held here with a representative attendance. From the spirit and general sentiment shown at the meeting, the movement seems an assured success. The conference is now considering the question of roads. It was suggested at the last meeting that a system of good roads should be devised for the section about Newark and Elizabeth and City Engineer Collins is considering having the conference take up the question of the improvement of a continuous road through Newark to the sound shore in Elizabeth. It was suggested by O. P. Goodrich, city planning expert for Newark, that all the roads of the vicinity be straightened out and shortened by a gradual process. Morris R. Sherrerd, chairman of the conference, suggested that more coherence be used in legislation concerning adjoining municipalities. Many new enrollments were made at the time and the organization perfected by the election of Frederick A. Reimer as vice-president, and by an announcement of the committees. The committees were announced as follows:

Street openings and widenings—W. D. Willigerod, East Orange; W. A. Howell, Newark; F. A. Reimer, Essex county. Waterways—John C. Minor, Jr., Elizabeth; A. H. Biertumpfel, Newark; Mr. Kreiner, Kearny. Water supply—M. R. Sherrerd, Newark; R. A. Peterson, East Orange; I. J. Casey, Irvington.

Real estate development—E. H. Halsey, South Orange; A. R. Denman, Newark; J. E. Hall, Hillside Township.
 Transit and transportation—G. W. Feigenspan, Newark; Joseph Crawford, Newark; H. W. Hellman, Essex county.
 Sewers—E. S. Rankin, Newark; I. J. Casey, Irvington; Thomas A. Collins, Elizabeth.
 Parks, playgrounds and municipal decorations—Alonzo Church, Essex county; J. L. Mason, Newark, East Orange.
 Legislation—Richard, Stockton, Newark; Charles Kocher, Bloomfield; M. R. Sherrerd, Newark.
 Paving and repaving—F. A. Reimer, Essex county; Charles P. Gillen, Newark; F. T. Sheppard, Belleville.
 Lighting and electrical development—A. H. Biertumpfel, Newark; F. O. Runyon, South Orange; R. A. Peterson, East Orange.

Flood Protection Plans.

Fort Worth, Tex.—The damage done to municipal property and to about 400 private homes by the floods from the gap in the levee has caused the City Commissioners and the members of the Levee Board to take steps to protect the city's property and to protect the property of the residents of the bottom lands. During the rise about 800 barrels of oil, valued at \$600, were washed away; the water entered the plumbing department of the water works and flowed into the reservoir for artesian water, contaminating the water supply for about three days. Both city and county roads were washed badly by the current. The damage that has been caused by the floods since the cutting of the levee, it is said, will amount to the cost of a levee that would protect the water works. Judge Robert G. Johnson, chairman of the Levee Board, estimates the cost of such a levee at about \$12,000. The county has erected bridges over the river along the levee that cost more than \$300,000, but during high water it is often impossible to get to the bridges unless the approaches are protected by a completed levee. The Levee Board cannot fill the gap in the levee because the city officials have been granted an injunction restraining it from completing the work. It has been suggested that these citizens of the suburbs cut off from the city by the floods probably will subscribe toward a fund to help the city build its levee. The levee under consideration by the city officials is a semicircle around the waterworks plant. The differences between the city officials and the members of the Levee Board were finally ended when the commissioners took steps toward the protection of the waterworks plant from overflows of the Trinity River. When the \$800,000 Holly waterworks plant, which has a capacity of 21,000,000 gallons of water daily, is protected, the injunction restraining the Levee Board from completing the levee or refilling the gap will be withdrawn. The Levee Board is anxiously awaiting opportunity to complete the levee, which will protect 30,000 acres of bottom land, inhabited by one thousand families.

Municipal Food Stores.

Houston, Tex.—If the suggestion of City Attorney Winston McMahon is carried out, and some of the members of the City Council are known to be in favor of it, Houston may establish a municipal slaughter house and a municipal bakery and flour depot, and sell meat, bread and flour to citizens at cost. In a letter to the mayor and the four city commissioners the city attorney called attention to the fact that under the charter the Council is authorized to establish slaughter houses, bakeries, grocery stores, ice factories, etc., for the benefit of the public. He called attention to the fact that during the present rise in prices the municipal government would be justified in taking action under the charter and providing relief for the public.

Municipal Street Dances.

Redlands, Cal.—Redlands has inaugurated municipal street dances. On the opening night more than three thousand gathered on the streets to dance to music furnished by the Redlands Municipal Band. Men and women of all classes danced together. It is planned to hold several dances during the summer season.

Streets Closed for Playgrounds.

New York, N. Y.—Under a plan developed by Police Commissioner Woods and the Park and Playgrounds Association, certain places will be closed to traffic between 2 and 6 each afternoon so children may have safe play in them. The Commissioner announced that the plan would become effective at once and has instructed a committee of inspectors to examine each east side street to see what new streets may be chosen and added to the list.

LEGAL NEWS

A Summary and Notes of Recent Decisions— Rulings of Interest to Municipalities

Improvement District—Construction of Sewer System— Liability.

Wheatley v. City of Rogers.—Where an improvement district was organized in a city to construct and operate a sewer system for the city, and the board of improvement prepared plans which were approved by the city council, and accordance therewith the board constructed a system of sewers and discharged sewage near the land of an individual polluting the water of a natural drain through his land, the individual could not maintain an action against the city, but must sue the improvement district.—Supreme Court of Arkansas, 168 S. W. R., 1086.

Injuries to Persons on Streets—Notice—Evidence.

Burton v. Kansas City.—Where a city authorizes a contractor to do something to the street which will render it unsafe and require warning lights, no notice of the failure of the contractor to place lights need be proved, since the primary duty is upon the city to keep its streets reasonably safe. In an action for the death of plaintiff's husband, who drove into an unguarded defect on a street, evidence concerning the unfinished condition of the street at other places along the block, and that at no point it was guarded, is admissible as bearing on the question whether travel was confined to only a single side of the street and as to whether deceased had knowledge of the street's generally defective condition.—Kansas City Court of Appeals, 168 S. W. R., 890.

Power to Light Street—Incidental.

Powers.—An express grant of power to a municipality to light streets carries, by implication, power to construct or acquire by purchase a lighting plant for that purpose. Where a municipality had power under its charter to purchase an electric light plant, it was liable under an implied promise for the reasonable value so purchased and used by it, though the power was not properly exercised by the city council, and though bonds voted to pay for it were invalid.—Supreme Court, Tennessee, 168 S. W. R., 1053.

Vault Connection with Sewers—Nuisance.

Gault v. City of Ft. Collins.—In a prosecution under an ordinance requiring the connection of vaults with sewers, a property owner who maintained an outdoor vault cannot be punished as for a maintenance of a nuisance, but to be so punished must be proceeded against under an ordinance declaring such structures nuisances and providing for abatement.—Supreme Court of Colo., 142 P. R., 171.

Special Assessments—Action to Set Aside—Limitations.

Rockwell (O'Malley et al. intervene) v. Junction City et al.—The statutory provision that actions to set aside special assessments must be brought within 30 days from the time the assessment is ascertained is a special statute of limitations which applies to the insufficiency of a petition for a street improvement, including fraud in obtaining signatures to the petition, and was intended by the Legislature to cut off defenses of every kind that might be made against such an action.—Supreme Court of Kansas, 142 P. R., 268.

Bond Election—Validity—Use of Funds.

Gracen v. Mayor and Alderman of City of Savannah et al.—That a city election was to determine whether bonds should be issued to purchase a site and also to erect a public auditorium thereon did not render the election void as being for two distinct purposes which could not be submitted to be voted on in one ballot. Merely that a city may contemplate and intend to use for an unlawful purpose the proceeds of bonds voted for a lawful purpose is not ground for refusing to validate the bonds.—Supreme Court of Georgia, 82 S. E. R., 453.

THE MUNICIPAL INDEX

In Which Are Listed and Classified by Subjects All Articles Treating of Municipal Topics Which Have Appeared During the Past Month in the Leading Periodicals.

It is our purpose to give in the second issue of each month a list of all articles of any length or importance which have appeared in all the American periodicals and the leading English, French and German ones, dealing more or less directly with municipal matters. The index is kept up to date, and the month of literature covered each time will be brought up to within two or three days of publication. Our chief object in this is to keep our readers in touch with all the current literature on municipal matters. In furtherance of this we will furnish any of the articles listed in the index for the price named after each article, except that where an article is continued in two or three issues of the paper, the price given is for each of said issues. In addition to the titles where these are not sufficiently descriptive or where the article is of sufficient importance, a brief statement of its contents is added. The length also is given, and the name of the author when it is a contributed article.

ROADS AND PAVEMENTS.

Roads that Start Somewhere and End Somewhere. General article. By Gov. Emmet O'Neil, of Alabama. Ill., 6 pp., Southern Good Roads, August. 10 cts.

To Further the Building of Permanent Roads. How the use of heavy types of construction to meet the needs of traffic will be advanced on national and state highways and county and township roads. By Stanley E. Bates, engineer of highway publications of the National Highway Association. Ill., 3 pp., The Highway Contractor, August. 10 cts.

Some Practical Points on Modern Roadways. Planning of new roads and improvement of the existing road. By W. H. Maxwell, borough engineer, Tumbidge Wells. 1 1/4 pp., Contract Journal, July 29. 20 cts.

The Dynamics of the Road Problem. The wear and tear on the road. 1/2 p., Contract Journal, July 29. 20 cts.

Methods and Cost of Road and Trail Construction in Alaska. Wagon road, sled road, pack roads. 3 1/2 pp., Engineering and Contracting, September 2. 10 cts.

Road Culverts and Siphons. By James Wharton Jones. Ill., 1 1/4 pp., Southern Good Roads, August. 10 cts.

Gasoline Tractors for Southern Road Work. General description. By G. E. Buchanan, surveyor of Caroline County. Ill., 2 pp., Engineering News, August 27. 15 cts.

Construction and Use of the Wooden Road Drag. With working drawing and list of material needed for construction. Ill., 1 1/4 pp., Engineering and Contracting, August 26. 10 cts.

Gravel Roads in Iowa. Construction of. Description of gravel suitable for construction; preparation of road bed; placing the gravel and finishing the surface. 1/4 p., Engineering and Contracting, August 26. 10 cts.

Streets and Roads: Construction and Maintenance. Road maintenance in Middlesex County. Surveyor's report. 1/2 p., Local Government Journal, August 8. 5 cts.

Street Paving in Providence. Method of laying granite blocks and bituminous macadam. Cost. Ill., 2 1/4 pp., Municipal Journal, September 3. 10 cts.

Recent Paving Practice in Chicago. Reduction in width of roadway where permissible. Artistic effect obtained in crowning. Pitch filler found most satisfactory. By A. J. Schafmayer, division engineer, Bureau of Local Improvements. Ill., 1 1/4 pp., Engineering Record, August 22. 10 cts.

Wood Block Paving in Memphis. Use of a mortar cushion in construction work. By J. H. Weatherford, city engineer. Ill., 1 1/4 pp., Municipal Journal, September 3. 10 cts.

Lug Wood Block in Nashville. Use of. Twelve-pound oil treatment; mortar cushion; method of applying pitch filler. Ill., 1 1/2 pp., Municipal Journal, September 3. 10 cts.

Wood Blocks. Oil for. 3/4 p., Municipal Journal, September 3. 10 cts.

Oil. Specifications and Tests. Road. Gives regulation specification clauses; what they mean and why they are inserted. By Clarence B. Osborne, geologist, California Highway Commission. 1 1/4 pp., Engineering News, August 13. 15 cts.

Grouting and Penetrating Methods of Road Surfaces. Technical article. By Geo. Green, borough engineer, Wolverhampton. 4 pp., Contract Journal, August 5. 20 cts.

Bituminous Paving in Washington. D. C. Technical article. By Geo. D. Steele. 2 pp., Better Roads and Streets, August. 10 cts.

Slag as a Road Surfacing Material. General article. 1 1/2 pp., Canadian Engineer, August 20. 15 cts.

Granite Block Paving. Recent Developments in. Summary of recent developments in New York City and elsewhere. Granite blocks with 3/4-inch joints. New York City specifications. Ill., 5 1/2 pp., Engineering News, August 13. 15 cts.

Granite Block. Relaying Old. Methods and cost. Smoothing the rough surface. By Kenneth C. Cardwell. Ill., 1 p., Municipal Journal, September 3. 10 cts.

Roemac Macadam Roads. By Geo. D. Steele. Ill., 1 p., Better Roads and Streets, August. 10 cts.

Brick Paving in Philadelphia. Specifications and construction methods of contractors. Making repairs to old pavements. Ill., 2 pp., Municipal Journal, September 3. 10 cts.

New Specifications for Brick Streets and Highways. 1/2 p., Municipal Journal, September 3. 10 cts.

Use of Vitrified Brick for Country Highway Construction. By W. P. Blair. 2 1/2 pp., The Highway Contractor, August. 10 cts.

Manufacture of Paving Brick. Ill., 2 1/2 pp., The Highway Contractor, August. 10 cts.

Concrete in Highway Construction. The Use of. General description. By J. P. Beck, Secretary, National Conference on Concrete Road Building. Ill., 4 pp., Ohio State Highway Department Monthly, August. 10 cts.

Cement Concrete Pavements of Athens, Ga. By J. W. Barnett, city engineer. Athens, Ga. 1 1/4 pp., Better Roads and Streets, August. 10 cts.

Connecticut Reinforced Concrete Road. Method of construction. 1/2 p., Municipal Journal, September 3. 10 cts.

The Use of Hydrated Lime in Concrete Mixtures for Pavements. By Robert S. Edwards, consulting and chemical engineer. 1 1/4 pp., Cement and Engineering News, August. 10 cts.

Cars and Locomotives on Concrete Road Work. General article on use of narrow gauge equipment in general road work. 1 1/4 pp., The Contractor, August 15. 20 cts.

Patent Granted for Concrete Roads and Streets. Patent covers the concrete pavement supported on an earth bed and forms with expansion joints armored at their upper edges. By Geo. D. Steele. 2 3/4 pp., Better Roads and Streets, August. 10 cts.

Wear and Cost of Concrete Roads. General construction data with initial and maintenance expense. By W. S. Shaw. 2 1/4 pp., Engineering Magazine, September. 25 cts.

Details of Reinforced Concrete Pavement in Morgan Park. Ill. Technical article. Ill., 1 1/4 pp., Engineering and Contracting, August 26. 10 cts.

Concrete Base Construction on California State Highways. Contractor's method of placing and curing. 1 p., Engineering and Contracting, September 2. 10 cts.

Cost of a Road. Comparison between first cost and savings due to improved highways. By F. A. Churchill. Ill., 2 1/2 pp., The Highway Contractor, August. 10 cts.

Maintenance. Importance of. Need of promptitude in repairing cuts and breaks. Ed., 1 1/4 p., Municipal Journal, September 3. 10 cts.

Street Pavement in Chicago. Cost for mending 450 miles of pavement. Ill., 1 1/2 pp., Engineering Record, August 15. 10 cts.

Pay for Street Paving. Finding Money to. New methods of raising money for street work. 3/4 p., Engineering News, August 13. 15 cts.

Wide Streets in Superior, Wis. Narrowing. Ill., 1/2 p., Engineering Record, August 29. 10 cts.

Highway Engineering. Undergraduate instruction in. By T. R. Agg, Prof. Iowa State College. 2 pp., Engineering News, August 20. 15 cts.

Standards of the Pennsylvania State Highway Department. Organization and. Standard cross sections for all kinds of roads. Dimensions of retaining walls, and specifications used by the Highway Department. Ill., 7 1/2 pp., Engineering and Contracting, August 19. 10 cts.

Management. The Merit System in Road. General article. 3 pp., Better Roads and Streets, August. 10 cts.

Tunnel. Concrete Lined Highway. Carrying heavy load from railroad above it. Tunnel construction complicated by several railroads passing over it, and by the poor rock encountered. These conditions involved the design of arch roof and special retaining walls. Ill., 1 1/2 pp., Engineering Record, August 15. 10 cts.

Testing Brick. Methods of. Tests for specific gravity, crushing strength, transverse strength, absorption and for impact and abrasion. 1 1/2 pp., The Highway Contractor, August. 10 cts.

Seventeenth Annual Meeting of the American Society for Testing Materials. Papers and reports of standard tests for road materials, definition of road materials, tests for stone and slag, specifications for tests of drain tile, methods of tile laying with maximum load, etc. 7 pp., Better Roads and Streets, August. 10 cts.

A Proposed Standard Abrasion Test for Gravel. Result of investigations conducted by the Ohio State Highway Department. 3 1/4 pp., Ohio State Highway Department Monthly, August. 10 cts.

Testing Concrete Aggregates. Discussion by Nathan C. Johnson of C. M. Chapman's paper before American Society for Testing Materials. Ill., 1 p., Engineering Record, August 29. 10 cts.

SEWERAGE AND SANITATION.

Treatment, Sewage. Covering theory, plans and construction. First of a series of articles. By R. J. McKenna. 3/4 p., Contract Journal, August 19. 20 cts.

Collection and Treatment of Sewage in Philadelphia. General description. 2 pp., Engineering and Contracting, August 26. 10 cts.

The Probable Future of Various Sewage Treatment Methods. Covering methods by oxidation and clarification. 1 1/4 pp., Engineering and Contracting, August 26. 10 cts.

Municipal Sewage Treatment Plants in the United States. Statistics of cities operating sewage treatment plants. 3 1/2 pp., Municipal Journal, August 20. 10 cts.

Sewage Treatment Plants. Additional plants not included in previous list. 3/4 p., Municipal Journal, August 20. 10 cts.

Operation of Sewage Disposal Plants. Purchasing, mixing and applying hypochlorite. Apparatus for retaining and controlling flow. Advantages and disadvantages of liquid chlorine compared with hypochlorite. By Frances E. Daniels, director of water and sewage inspection, Board of Health of New Jersey. Ill., 3 1/2 pp., Municipal Journal, August 20. 10 cts.

Sewage Disposal in Europe. Brief review of sewage disposal works in some of the principal European cities. 3 3/4 pp., Canadian Engineer, August 20. 15 cts.

Sedimentation. Tanks Under Streets. Project for clarifying some of the sewage of Manhattan Borough. 1 p., Municipal Journal, August 20. 10 cts.

Sterilization of Sewage. Discussion. $\frac{1}{2}$ p., Municipal Journal, August 20. 10 cts.
Sewage Disinfection in Actual Practice. Observations based on the operation of twenty plants in New Jersey using hypochlorite as a disinfectant. By William J. Orchard, New Jersey State Board of Health. 2½ pp., Contract Record, August 19. 10 cts.

Outfall Sewer. Design and Construction of. About one and one-half mile of sewer pipe partly in rock trench and partly in saturated soil; methods of making mortar joints and experience with leakage; some costs are given. By C. A. Bryan, resident engineer, Sewerage Commission, Carlisle, Pa. Ill., 2½ pp., Engineering News, August 13. 15 cts.

Interceptors, for a Large Sewerage System, Design of. Extracted from report on the plan of sewerage for the city of Cincinnati. 6½ pp., Canadian Engineer, August 27. 15 cts.

Construction of a Small Sewerage System for Garfield, N. J. By Russell S. Wise, assistant engineer in charge of construction. Ill., 2½ pp., Engineering News, August 27. 15 cts.

Streams. Studies on the Self-Purification of. Results of the sanitary investigations carried out by the United States Public Health Service. By Earle B. Phelps, Prof. of Chemistry, Hygienic Laboratory, U. S. Public Health Service. 5 pp., Public Health Reports, August 14.

House Connections to the New Orleans Sewerage System, Method and Cost of Making. 1 p., Engineering and Contracting, August 26. 10 cts.

Filters. Economic Aspects of Intermittent Sand. Statistics from many cities. Indicates the superiority of sprinkling filters from the standpoint of cost. $\frac{1}{2}$ p., Engineering Record, August 22. 10 cts.

Hygiene in France and Belgium. Public. General article. 3 pp., Journal of the Association of Municipal Hygienists, August 60 cts. (La Technique Sanitaire). Hygiene of the City. One of a series of articles on city hygiene. 1½ pp., Revista Municipal, August 1. 25 cts.

Municipal Ordinances, Rules and Regulations Pertaining to Public Health. Extracts from ordinances of various cities. 20 pp., Public Health Reports, July 31.

Ice, Safe. Importance of determining the sanitary safety of ice. By H. S. Cummings, surgeon, U. S. Public Health Service. 8 pp., Public Health Reports, August 7.

Maryland's Health Appropriation. $\frac{1}{2}$ p., Municipal Journal, August 20. 10 cts.

Pipe. The Manufacture of Sewer. The seventh of a series of articles written by Anton Vogt covering every phase in the manufacture of sewer pipe, including raw materials, the making, drying, setting, burning, cooling and loading. 2 pp., The Clay Worker, August. 20 cts.

Proposed Standard Specifications and Recommended Practice for Drain Tiles and Tile Drain Construction. Report of committee of the American Society for Testing Materials. 2 pp., Engineering and Contracting, August 19. 10 cts.

WATER SUPPLY.

Water Works from Fire and Insurance Standpoints. Technical description. By Joseph B. Rider, C. E. Ill., 2 pp., Fire and Water Engineering, September 2. 10 cts.

Holyoke Water Works. Popular description. Ill., 1 p., Fire and Water Engineering, September 2. 10 cts.

Topeka's Water Works. History and description. 1½ pp., City Progress, August. 10 cts.

Designing Small Water Works Systems. Covering future requirements, size of mains, pumping engines, pipe thicknesses, and reservoir location. 2 pp., Engineering and Contracting, August 26. 10 cts.

Report on Improvement of Lowell Water Supply. Engineering Report. Ill., 2½ pp., Fire and Water Engineering, September 2. 10 cts.

Water of Lima, Peru. Paper before Society of Engineers. By Marco Aurelio Denegri. 28 pp., Journal of the Society of Peruvian Engineers, May and June, 1914. 25 cts.

Changes and Enlargement of Water Purification Plants at Youngstown, Ohio. Engineering description. 1½ pp., Engineering News, August 20. 15 cts.

Dam at Baltimore. The New Loch Raven. Description of present source of supply and details of construction of the new dam. By Ezra B. Whitman, formerly water engineer City of Baltimore. Ill., 6½ pp., Engineering News, August 13. 15 cts.

Reservoir Floor, Waterproofing. Eliminating leakage in one of the basins of the St. Louis clarification plant by appli-

cation of pitch and tarred felt protected with concrete blocks. Ill., $\frac{3}{4}$ p., Engineering Record, August 15. 10 cts.

Notes on the Maintenance of Wachusett Reservoir. Preservation of survey points, the design and maintenance of the steep slopes of the deep reservoir. Roadways as fire stops in the reforested area of the reservoir. By J. A. Cushman, Asst. Engr., Met. Water and Sewage Board. Ill., 3 pp., Engineering News, August 13.

Tanks. Design and Construction of Elevated. By W. O. Teague. Ill., 4½ pp., Canadian Engineer, August 20. 15 cts.

Waste. Curtailment of Water, and Selection of Meters at Milwaukee. Extract from report of the superintendent of Water Works. 1 p., Engineering and Contracting, August 19. 10 cts.

How the Water Department is Saving Money for the Taxpayers through its Pitometer Survey. Description of methods in Baltimore. Ill., 1 p., Municipal Journal of Baltimore, August 14. 10 cts.

Measurement With Chemicals. Water-Discharge. Titration method described by B. F. Groat, hydraulic engineer of Pittsburgh, before Engineer's Society of Western Pennsylvania. Two parts. 3½ pp., Engineering Record, August 22d and 29th. 10 cts.

Filtration and Mechanical Washing of Filter Sand at Wilmington, Del. Covering unique and unusual features in the design and operation of Wilmington's water filtration works. Ill., 2½ pp., Engineering and Contracting, August 26. 10 cts.

St. Louis Filtration Plant. Popular description. By Edward E. Wall, Water Comr. Ill., 2½ pp., Fire and Water Engineering, September 2. 10 cts.

Present Day Water Filtration Practice. By Geo. A. Johnson. 1½ pp., Fire and Water Engineering, August 26. 10 cts.

Some Features of Details in the Design of Rapid Sand Water Filtration Plants. Technical article. By Geo. W. Fuller, consulting engineer and sanitary expert, New York City. Ill., 4½ pp., Engineering and Contracting, September 2. 10 cts.

Economic Size of Sand Filter Beds. Mathematical discussion. $\frac{1}{2}$ p., Engineering and Contracting, August 19. 10 cts.

Disinfectant. Calcium Hypochlorite as a Water. By E. J. Tully, chemist, State Hygiene Laboratory, Madison, Wis. $\frac{1}{2}$ p., Contract Record, August 19. 10 cts.

Sterilization of Water by Means of Ultra-Violet Rays. Technical article. By Emilio Guarini. 5 pp., Journal of the Society of Peruvian Engineers, May and June, 1914. 25 cts.

Purity of Public Water Supplies in Montana. Chemical Standards for Hygienic. $\frac{1}{2}$ p., Engineering and Contracting, August 19. 10 cts.

Problem of Pure and Abundant Water Supply. General article. By Dr. Ralph Steiner, state health officer of Texas. Ill., 4 pp., Bulletin, State Board of Health, June.

Characteristics of Safe Drinking Water. Results of a number of tests made at several large cities. By Dr. Allen J. McLaughlin, chief sanitary engineer and director of field work, International Joint Commission. 3¼ pp., Canadian Engineer, August 20. 15 cts.

Microscopy of Drinking Water. 2 pp., Water and Water Engineering, August 15. 25 cts.

STREET LIGHTING AND POWER PLANTS.

Interurban Highways. Lighting of, as a Central Station Opportunity. General article. By Douglas S. Martin. 3 pp., Engineering Magazine, September. 25 cts.

Street Lighting. Information Concerning. Municipal and private plants. 14 pp., Municipal Journal, August 27. 10 cts.

Lighting Notes. Contemplated improvements in municipal plants. 1 p., Municipal Journal, August 27. 10 cts.

Lighting Euclid Ave., Cleveland. Installation of 32 inverted flame arcs on ornamental standards. Ill., 1½ pp., Municipal Journal, August 27. 10 cts.

Seattle's Lighting Department. Arcs and series tungstens being replaced with nitrogen-filled lamps. Electricity for residence heating found not economical. Depreciation rates. New stations. Ill., 2½ pp., Municipal Journal, August 27. 10 cts.

Wiring Details for Lighting of Gilbert Ave., Viaduct. By Kenneth C. Cardwell. Ill., 2 pp., Electric Review, August 15. 10 cts.

Glass Globes for Street Lamps. Rela-

tive advantages of clear glass ground, opaline light and dense opal and prismatic glass for globes. By James R. Cravath. 2½ pp., Municipal Journal, August 27. 10 cts.

Gas. High Priced. Description of methods at Bellefontaine, Ohio. 2½ pp., Public Service, September. 20 cts.

Salem's Electric Service. Rehabilitation. Ill., 1½ pp., Electric Review, August 15. 10 cts.

Power Plant. Operating Costs in a Data on office building plant covering the cost of current, heating and elevator service. Results of a special test to determine the coal taken by the elevators. By W. G. Lighty. 1½ pp., Power, August 18. 5 cts.

GOVERNMENT AND FINANCE.

City-Manager Plan of Municipal Government. By Paul E. Kressly, city manager and city engineer, Inglewood, Cal. 2½ pp., Engineering News, August 13. 15 cts.

Six months at Dayton Under the City-Manager Plan. Plans made for future expenditures. $\frac{1}{2}$ p., Engineering Record, August 22. 10 cts.

Revenue and Expenditures. Municipal. By C. M. Fassett, commissioner of public utilities. 4½ pp., Pacific Municipalities, August. 25 cts.

Engineering Department. Notes on Organization of a Municipal. By Edward Willis, engineer and surveyor, Chiswick. 2½ pp., Contract Journal, August 12. 20 cts.

STREET CLEANING AND REFUSE DISPOSAL.

Street Cleaning Methods. Washington, D. C. The third of a series of articles describing Washington's street cleaning methods. By J. W. Paxton, superintendent of street cleaning. Ill., 2 pp., Engineering News, August 27. 15 cts.

Litter Prevention as a Street Cleaning Factor. By Comr. J. T. Fetherston, Department of Street Cleaning, New York City. Ill., 4 pp., Dependable Highways, August. 10 cts.

Watering. The Science of Street. By Ernest H. Essex, engineer and surveyor to the Leyton Urban District Council. Ill., 4 pp., Journal of the Institution of Municipal and County Engineers, August. 35 cts.

Garbage Incinerators and Destructors. Description of the process in the modern English type of refuse destructor, with references to various plants in operation. By Sterling H. Bunnell. Ill., 3 pp., Contract Record, August 19. 10 cts.

TRAFFIC AND TRANSPORTATION.

Motor Trucks. Power and Performance of Gasoline. Technical article. By Cornelius T. Myers. 2 pp., Commercial Vehicle, August 15. 20 cts.

Standard Cost of Keeping System for all Classes of Motor Freight Vehicles. By Merrill C. Horne. 8½ pp., The Commercial Vehicle, September 1. 20 cts.

Systems which Are Responsible for Efficiency of Pittsburgh Trucks. Differences in shipping rooms, package-handling systems and loading methods. Ill., 7½ pp., The Commercial Vehicle, September 1. 20 cts.

MISCELLANEOUS.

Electrical Inspection in Chicago. Bureau inspects interior and outside work, electric signs and examines moving picture operators and investigates electrical accidents. 2 pp., Municipal Journal, August 27. 10 cts.

City Planning. Provisions for growth, entrances, avenues, parks, civic centre and buildings. By C. J. Yorath. 2½ pp., Engineering Magazine, September. 25 cts.

Results of City Planning in Essen, Germany. By H. M. Lewis, engineer, Emscher River Board, Germany. Ill., 2½ pp., Engineering News, August 20. 15 cts.

Pier. Design Features of the Commonwealth, No. 1, East Boston. Ill., 2½ pp., Engineering and Contracting, August 19. 10 cts.

Sub-Contractor. Rights of the in Contracts for City Work. Method of protecting sub-contractors' interests by contract with contractors. By William T. Childs, deputy city controller, Baltimore. 1 p., Municipal Journal, September 3. 10 cts.

Geology in Municipal Engineering. Applied. Technical article. By Herbert Lanworth. 1½ pp., Contract Journal, August 10. 20 cts.

"Clean-Up Week" in Philadelphia. Method of conducting campaign. 1 p., Engineering Record, August 22. 10 cts.

NEWS OF THE SOCIETIES

Calendar of Meetings.

Sept. 15-18.
INTERNATIONAL ASSOCIATION OF MUNICIPAL ELECTRICIANS.—Annual Convention, Atlantic City, N. J. Secretary, C. W. Pyke, Electrical Bureau, Philadelphia, Pa.

Sept. 19-20.
CONFERENCE INTERNATIONALE A LYON.—L'Union Internationale des Villes and l'Union des Associations Internationales, Lyons, France.

Sept. 21-25.
ILLUMINATING ENGINEERING SOCIETY.—Eighth Annual Convention, Cleveland, Ohio. Assistant Secretary, Joseph Langan, 29 West 39th street, New York City.

Sept. 28-Oct. 3.
LEAGUE OF AMERICAN MUNICIPALITIES. Annual Convention, Milwaukee, Wis.

Oct. 6-9.
AMERICAN SOCIETY OF MUNICIPAL IMPROVEMENTS.—Annual Convention, Boston, Mass. Secretary, Charles Carroll Brown, Indianapolis, Ind.

Oct. 7, 8, 9.
LEAGUE OF KANSAS MUNICIPALITIES.—Lawrence, Kan. Secretary, C. H. Talbot.

Oct. 7-9.
MOTOR TRUCK CLUB OF AMERICA.—Annual Convention, Detroit, Mich. President, George H. Duck, New York.

Oct. 20-23.
INTERNATIONAL ASSOCIATION OF FIRE ENGINEERS.—Annual Convention, Grunewald Hotel, New Orleans, La. Secretary, Mr. McFall, Roanoke, Va.

Oct. 21-23.
ALABAMA GOOD ROADS ASSOCIATION.—Nineteenth Annual Convention, Montgomery, Ala. Secretary, J. A. Rountree, 1021 Brown Marx Bldg., Birmingham, Ala.

Oct. 28-31.
NORTHWESTERN ROAD CONGRESS.—Annual Convention, Milwaukee, Wis. Secretary, J. P. Keenan, Milwaukee.

Nov. 9-13.
FOURTH AMERICAN ROAD CONGRESS.—American Highway Assoc. and American Automobile Assoc., Atlanta, Ga. Secretary, J. S. Pennybacker, Colorado Building, Washington, D. C.

Nov. 18-20.
WASHINGTON STATE GOOD ROADS ASSOCIATION.—Spokane, Wash. Secretary, M. D. Lechey, Alaska Building, Seattle, Wash.

Dec. 14-17.
AMERICAN ROAD BUILDERS' ASSOCIATION.—11th Annual Convention; 5th Annual Good Roads Congress, and 6th Annual Exhibition of Machinery and Materials, International Amphitheatre, Chicago, Ill. Secretary, E. L. Powers, 150 Nassau st., New York, N. Y.

Feb. 10-17, 1915.
EIGHTH CHICAGO CEMENT SHOW.—Coliseum, Chicago, Ill. Cement Products Exhibition Co., J. P. Beck, General Manager, 208 S. La Salle Street, Chicago, Ill.

Virginia State Firemen's Association.

From Aug. 26 the 26th annual convention of the association was held at Portsmouth for three days. Mayor Hope welcomed the delegates and Captain C. T. Bland described the working of the Portsmouth fire department. A memorial address was delivered by Captain John H. Redwood, of the Richmond fire department. The last address delivered on the first day was one by G. G. Cumming on "Is the Automobile Fire Engine So Far a Success?"

During Aug. 27 and 28, the customary races and other contests were held and officers chosen. Chief F. C. Jesser, of Covington, was elected president, and following are the other officers elected for the ensuing year: C. H. Hewins, Hampton, senior vice-

president; J. J. Holt, Covington, statistician; T. J. Williams, Charlottesville, treasurer; J. E. Glenn, Harrisonburg, secretary; Rev. C. H. Smith, Richmond, chaplain; W. K. Stowe, Newport News, chairman of legislative committee.

In 1915 the convention will be held in Covington.

New York State Firemen's Association.

Over 1,200 delegates were present at the three-day convention which opened on Aug. 18 at Geneva.

Mayor Gulvin delivered the address of welcome and other speeches were made by Deputy State Fire Marshal E. W. Stocker and ex-Senator S. W. Smith, president of the association.

A parade, tournament and moving picture entertainment were interesting features.

The following important resolution was passed:

"Resolved, That the law committee be directed to use its utmost endeavors to procure the insertion in the civil service articles of the proposed new State Constitution such provisions as will amply protect the interests of the veteran volunteer firemen in the matter of appointment and retention in the public service of the State of New York, and the political subdivisions thereof; also,

"Resolved, That the members of the Firemen's Association of the State of New York, the delegates to this convention and all volunteer firemen of the State of New York be requested and urged to use their utmost endeavors to secure the election of delegates to such constitutional convention pledged to accord fair treatment to the volunteer firemen of the State in the public service."

These officers were elected: President, Sanford W. Smith, Chatham; first vice-president, John Sells, White Plains; second vice-president, John R. Mohoney, Lockport; secretary, Thomas Honohan, Frankfort; treasurer, John P. Powers, Ossining; trustee Firemen's Home, for terms of five years each, J. E. Eggleston, Cortland; Jacob Shoemaker, Buffalo; E. H. Seehusen, New Brighton; member of the executive committee, Fred A. Davis, Fort Edward.

Next year the convention will be held in Oneida.

Kansas State Firemen's Association.

For three days, beginning Aug. 28, the firemen of Kansas held a convention in Ellsworth which was marked not only by the reading of interesting papers, but also by the tournaments.

The officers for the coming year are: President, E. L. Bell, of Clay Center; first vice-president, S. T. Cole, of Otawa; second vice-president, W. O. Knight, of Garnett; secretary, K. D. Doyle, of Wamego; treasurer, G. T. Mohrbacher, of Marysville; executive

committee, T. E. Skinner, of Osborne; W. P. Condray, of Manhattan, and W. M. Bush, of Junction City.

National Electric Light Association.

The New England section of the association held its sixth annual convention at Narragansett Pier, R. I., on Sept. 3 and 4.

At the first business session on Sept. 3, the delegates were welcomed by Lieut. Gov. R. B. Burchard. President C. C. Wells, of Middlebury, Vt., delivered the presidential address. He was followed by G. F. Atwater, of New Britain, and R. S. Hale, of Boston. The former spoke on "The Relation of Meter Maintenance to Revenue" and the latter on "Rates." After several reports were read in the second session, the third session was occupied by an address by W. H. Aitkins, of Boston, on "The Recognition of the Electric Vehicle Interests in New England."

On Sept. 4 but one session was held, in which L. D. Gibbs, of the Boston Edison Company, was elected president.

An entertaining polo game was played in the afternoon.

League of Third Class Cities of Pennsylvania.

At the convention of the League, described in last week's issue, the following officers were elected for the ensuing year: President, Hon. Ira W. Stratton, Mayor of Reading; vice-president, Frank P. Cummings, City Solicitor of Williamsport; treasurer, John W. Haggerty, Councilman of Chester; secretary, Fred H. Gates, City Clerk, Wilkes-Barre; trustees—Joseph Cauffiel, Mayor of Johnstown; E. M. Bitner, Councilman of Bradford; T. J. Cole, Councilman of Meadville.

The 1915 convention will meet at Reading.

PERSONALS

R. L. Dobbin has been appointed water works superintendent for the Peterboro Utilities Commission, Peterboro, Ont. Mr. Dobbin was formerly resident engineer on the Moose Jaw water supply for two years during construction. He was also with the city of Moose Jaw in the water works department.

Jesse K. Giesey has resigned from the staff of Hering & Gregory, consulting engineers, of New York City, to take charge of sewer extension work for York, Pa.

Saville, Charles, has resigned from the firm of Hering & Gregory, Consulting Engineers, New York City, and will spend the coming winter in Boston, taking a graduate course at the School for Health Officers of Harvard University and the Massachusetts Institute of Technology. His address, after September 15, will be Waban, Mass.

Webb, A. C., who was employed by James Boyd & Bro., Inc., of Philadelphia, for about one year, is no longer connected with that firm.

NEW APPLIANCES

CHEMICAL FIRE APARATUS.

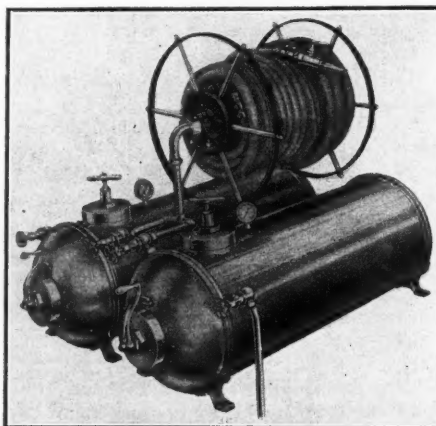
Chemical Extinguishers for All Purposes and Chemical Engines.

The "Childs" Chemical Extinguisher is a three-gallon extinguisher made of high-grade cold-rolled copper lapped jointed. The inside of the shell is coated with a metal mixture to prevent coating. In a bursting test the shell stood 700 pounds without straining at the joints. The bottle cage is made of No. 4 brass wire, securely fastened to the cap, and there are no loose parts. The cage does not depend on solder for strength. The hose is tested for 400 pounds pressure. The "Childs" rubber hose clamps allow of the old hose being easily replaced by new hose by the use of a screw-driver, thus eliminating the expense of new nozzle and coupling. The stopple is ground to fit the ground top and neck of each acid bottle so that the acid returns its full strength. The capacity is three gallons and the weight when charged is 38 pounds.

"Utica" Special Fire Department Extinguishers No. 4 and No. 6 were especially designed for severe service. No. 4 is a "loose stopple" extinguisher similar to the "Childs," but is much heavier and is calculated to stand rougher handling. The hose is longer and is provided with a nozzle with which the stream may be perfectly controlled. A partition is located just above the level of the soda solution so that any mixing of the chemicals caused by motion in carrying the extinguisher slung over the shoulder or the bumping of the fire apparatus is prevented. For exceptionally severe work a positive shut-off for the acid bottle is necessary, and in the No. 6

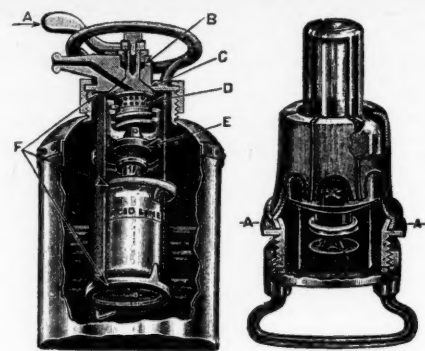
this is provided. A valve operating through the head positively closes the acid bottle so that the chemicals cannot mix until the valve is opened. "Utica" No. 7 and No. 8 fire extinguishers are designed for use on moving vehicles.

"Utica" Copper Tank Chemical Engines are made in several types—all of 40-gallons capacity. The tanks have a triple-riveted back seam and the heads are double riveted to the cylinders. They are tested to 350 pounds pressure, but will stand 700. The interior is liberally lead-coated to protect it from corrosion. The engine cannot be harmed in any way by falling because



EXTINGUISHER AND HOSE REEL.

of protecting buffers. The feed is graduated so that the stream is always alkaline and non-injurious. Type "F" is the simplest form for outside service and may be given rough hauling as a valve gives absolute shut-off to the acid. It occupies a space of 30 x 48 inches and weighs 700 pounds when



HAND CHEMICAL EXTINGUISHERS.

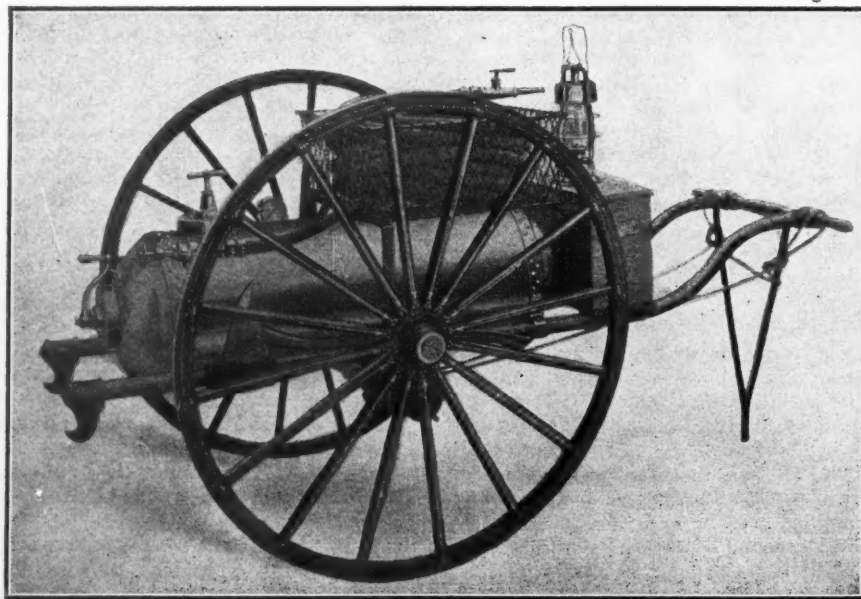
charged. Type "S" is similar, but with a separate axle, wider truck and longer handles. The weight is 525 pounds empty and 825 charged. Fifty feet of 3/4-inch chemical hose tested to 500 pounds is provided. Type "G" weighs 900 pounds charged and is operated by turning valve handle on top of tank wide open, thus releasing the acid bottle.

These extinguishers are made by the O. J. Childs Co., Utica, N. Y., and are in wide use in many cities, among these being Webster, Syracuse, Oneida, N. Y., Scranton, Pa., and at Panama.

NATIONAL TRANSIT GAS ENGINES.

300 to 1,400 B.H.P. Units of Side-Crank Design.

High power gas engines with their many advantages as prime movers are becoming more and more popular in the last few years. The first 1,000 B.H.P. gas pumping engine to be built in this country is claimed by the National Transit Company, Department of Machinery, Oil City, Pa. This company is now building gas engines of the four-cycle, horizontal-tandem, double-acting, side-crank type, in sizes from 300 to 700 B.H.P. in single-tandem units, and from 600 to 1,400 B.H.P. in twin-tandem units. The machines are of heavy-duty construction and of symmetrical design. They are built to be connected with other machinery, lighting generators, waterworks, pumps and air compressors of standard make. Some of the principal features of construction follow. Between the two cylinders is a body piece and at the end of the rear cylinder is a tail piece, the castings resting upon base plates on which they are free to slide as the engine contracts and expands. The cylinders are symmetrical one-piece castings made from close-grained iron and are provided with jacket bands which act as expansion joints and are water-jacketed. The pistons are cast in one piece and are water-jacketed. The cross-head and pin are of steel. The crank-shaft is of open hearth forged steel as are also the connecting rods. The packing is metallic and of



"UTICK" TYPE "C" CHEMICAL WAGON.

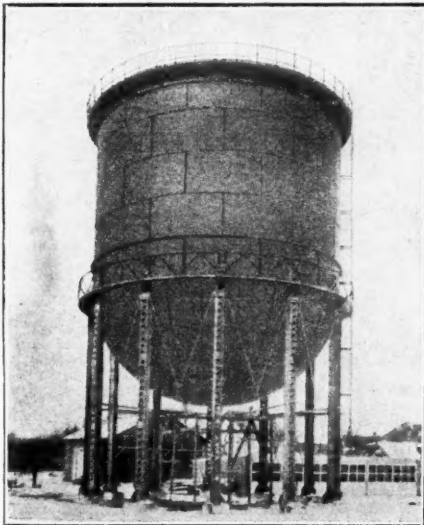
special design. A Jahns governor equipped speed regulator is used to operate the mixing valves, throttling the gas and air. The ignition system is mechanical "make and break." The engine is equipped with an air-starting valve in each combustion chamber. The lubrication is by means of Richardson multi-plunger force feed pumps timed to inject oil at the proper period of revolution, while the main bearings are lubricated by an independent pressure system with filters.

Many of the National Transit Gas Engines are in use by gas companies over the country for driving gas compressors. The illustration shows a 20 x36 Tandem Double Acting Gas Engine of 430 B.H.P. in use by the Hope Natural Gas Company, Clarksburg, W. Va.

ELEVATED STEEL TANKS.

Water Towers Specially Designed for Sprinkler Service—Tanks for Water Works.

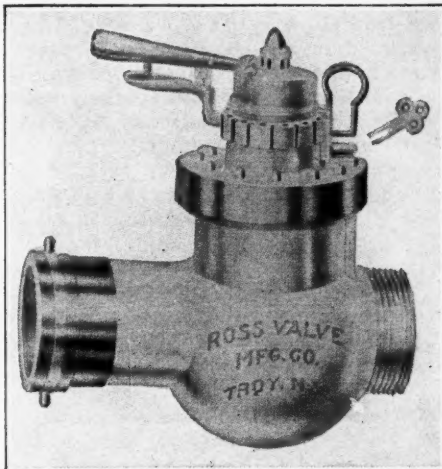
The Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa., uses a standard



LAKESWOOD, O., TANK.

design for steel water tanks to be installed with automatic sprinkler systems. These steel towers are particu-

larly adapted for fire protection in public buildings. Although the design is standard the engineering department of the company undertakes to design special structures for small space or other special conditions. It is claimed that steel tanks and towers cost less than wood outfits for sizes of 40,000 gallons or larger. The illustration shows a sprinkler tank built for a hospital in Rochester, N. Y., with capacity of 50,000 gallons and 100 feet high.



"SAN FRANCISCO" VALVE.

These steel tanks have been primarily used for waterworks systems. Where gravity systems are desirable and no natural elevation is available, steel tanks have a wide use. The tanks are constructed with hemispherical bottoms and large diameter riveted steel riser pipes which are more permanent than small pipes with wood frost casing. The bottom of the riser is equipped with inlet pipe flanges, manhole and blow-off valve, having an operating mechanism for discharging sediment without emptying the tank. The illustration shows a 560,000 gallon tank with 12 posts, 70 ft. top, built for the city of Lakewood, O.

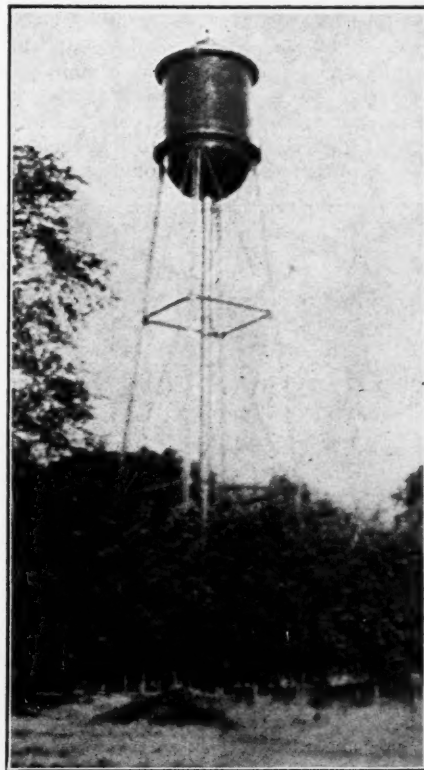
AN OPERATING AND REGULATING VALVE

Equipped With a Self-Locking Device.

The "San Francisco" type of "Trojan" operating and regulating valve

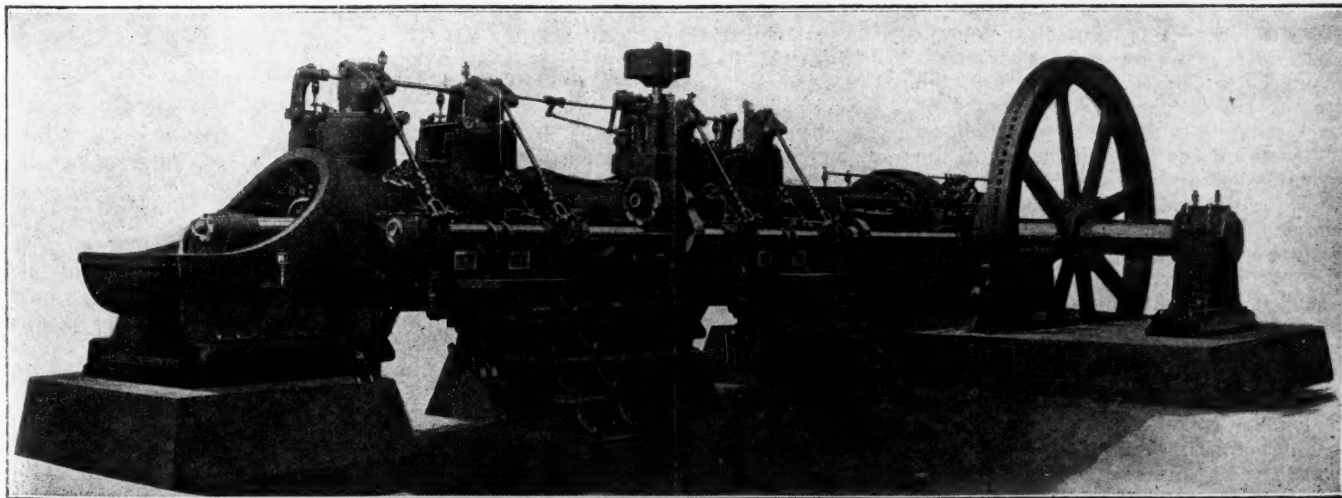
has a very useful feature in the handle which allows continuous operation of the valve without continuous attention. The handle is fitted with a spring lever, at the end of which is a catch-piece. This is made to fit into notches which are cut around the top of the valve, thus holding the valve in one position until change is necessary without the operator keeping his hand on the regulator.

High pressure water passes freely through the valve which is held open by the compression or tension on loading spring until the pressure in the outlet pipes is sufficient to overcome the spring tension. Low pressure is admitted from the outlet side through the stem and operates below the movable piston or flexible diaphragm, the



ROCHESTER, N. Y., TANK.

valve gradually opening or closing with any slight rise or fall of pressure



430 B.H.P. NATIONAL TRANSIT GAS ENGINE.

on the outlet side. Variation of pressure in supply has no influence in the valve, as two equal areas are exposed to the pressure on the high pressure side.

The "Trojan" is one of the Ross regulating valves made by the Ross Valve Manufacturing Company, Troy, N. Y.

A NEW POWER TAMPING MACHINE.

Three independent tamping heads are the principal feature of a new power tamping machine invented by George W. Pritchett, 805 Ashkow street, Greensboro, N. C. This allows of tamping at various levels at the same time as, for instance, one head may be in a ditch while the other two may be tamping on the surface. Each head weighs 100 pounds and is lifted vertically to any height up to 20 inches, and automatically dropped 30 times per minute. These heads are 8 inches in diameter and are carried on an auto truck which is either two-wheeled or four-wheeled, depending on the size of



PRITCHETT POWER TAMPER.

the machine. The control of operations is from the driver's seat, which is about in the center of the truck, the tractor has a speed either forward or backward of three miles per hour. When the heads are four inches off the ground the machine may be regulated to move the width of the heads. It is claimed that this machine will tamp dirt in ditches at any depth up to ten feet, the machine traveling outside the ditch, and that for backfilling the tamper will take the place of fifteen men.

For repairing macadam roads, sand-clay roads and streets, a load of material may be tied on to the machine and taken to the job. For tamping cobble stones, bricks, bases of sidewalks and other concrete work, trenches for conduit and pipe the machine should be effective.

INDUSTRIAL NEWS

The Goodyear Tire & Rubber Co. announces, "No war prices on Goodyear tires." F. A. Sieberling, president of the company, thus explains their unique position: "We advanced Goodyear prices, as others did theirs, when the rubber panic came. Almost in a day crude rubber rose in New York from 55 cents per pound to much over a dollar. And, as most of the world's rubber comes via London or Antwerp, we saw no way out for a time. But we have an almost world-wide organization, and we brought it at once into play. We are the world's largest buyers of high-grade rubber, so we have our own experts in London, Colombo, Singapore and Para. We cabled our London people to buy up the pick of the rubber there. By acting quickly and paying cash they obtained 1,500,000 pounds of the finest rubber there. They bought before the advance—before the other buyers saw a way to get London exchange or to bring the rubber here. We have since taken

other steps to insure us a continuous supply, all of the highest grade rubber. In all the chief sources of rubber supply we have experts on the ground. All is being done that can be done to secure the best rubber, the exchange to pay for it and the ships to bring it here. The result is that Goodyear tire prices are now the same as in June. We are running our factory with three shifts of men, twenty-four hours a day. So long as we remain in this fortunate position on rubber we shall supply tire users at before-war prices to the limit of our capacity."

The Draeger Oxygen Apparatus Co., Pittsburgh, Pa., has delivered a Pulmotor to the North Attleboro Gaslight Co., which will give the apparatus to the city. Fire helmets have just been delivered to the fire department of Jefferson City, Mo.

"Southern Beauty" Lamp Post.

We are informed by the Union Foundry Co., of Anniston, Ala., that the design of lamp post which appeared as "The American Beauty" on page 290 of the August 27th issue of Municipal Journal, is an accurate copy of their "Southern Beauty" post, which was designed by them and used in their installation at Anniston in 1911. Besides the installation at Anniston, where 60 of these posts were used, they furnished

the same design to Greenville, S. C.; Dublin, Ga.; Gadsden, Ala.; St. Johns, Mich.; Vicksburg, Miss.; Albany, Ga.; Lynchburg, Va.; Aberdeen, Miss.; Waycross, Ga.; Bristol, Va.-Tenn.; Lakeland, Fla.; Harriman, Tenn., and other cities before a copy of it was supplied to Ionia, Mich., by another firm.

The Goulds Manufacturing Co.—Announcement has just been made of the appointment of Mr. A. H. Whiteside as Vice-President and General Sales Manager of the Goulds Manufacturing Company of Seneca Falls, New York, manufacturers of hand, triplex and centrifugal pumps. Mr. Whiteside is well known in the machinery and allied trades. During the past fifteen years he has been connected with the Sterling Boiler Co. as Southern Manager, with the Westinghouse Electric and Manufacturing Company as their Baltimore Representative and with the Allis Chalmers Company as manager of their Power and Electric Department. In the latter capacity he had charge of all their pumping engine and centrifugal pump business. Mr. Whiteside succeeds Mr. W. E. Davis, who has been obliged to give up some of his active duties due to injuries sustained several months ago.

BOOK REVIEWS

JUVENILE COURTS AND PROBATION.—By Bernard Flexner and Roger W. Baldwin. 308 pp. Illustrated. Century Co., New York. \$1.25.

This volume was submitted as a report by the authors to a special committee of the National Probation Association—among the members of this committee being court officials of St. Louis, Denver and Chicago. The whole problem of juvenile delinquency and efficient methods of reducing it and turning the instincts underlying it into valuable social usefulness is investigated and reviewed in an accurate and inspiring way. The authors, even while recommending reforms, keep to concrete, detailed and helpful analysis. The book points out the methods of getting down to the causes of juvenile delinquency, the methods of treatment and the value of probation work. The question of suitable buildings or courtrooms in municipal buildings is analysed and actual plans for buildings for cities of different sizes are described, New York City and Milwaukee being among the examples. Forms and reports are suggested in detail. The authors recommend more probation work, more human procedure in better and more private courts and better places of detention. This book should serve as an admirable guide to all city officials, especially mayors and councilmen, judges and probation officers.

ADVANCE CONTRACT NEWS

ADVANCED INFORMATION BIDS ASKED FOR

CONTRACTS AWARDED ITEMIZED PRICES

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also correction of any errors discovered.

BIDS ASKED FOR

STATE	CITY	REC'D UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREETS AND ROADS.				
O., Mansfield	Noon, Sept. 12	Grading road	J. A. Dalton, Co. Aud.
O., Zanesville	Noon, Sept. 12	Constructing sidewalk, walls and terraces	Clerk Board Education
Ind., Richmond	Sept. 12	Construction of gravel roads	Louis Bowman, Aud.
Ind., Marion	2 p.m., Sept. 14	Paving several streets	E. H. Kimball, Co. Aud.
S. C., Spartanburg	Noon, Sept. 14	Constructing 5,000 sq. yds. concrete sidewalk and about 9,000 ft. concrete curb and gutter	City Clerk.
Ia., Carroll	2 p.m., Sept. 14	Grading five miles road	H. M. Hanssen, Co. Engr.
S. D., Sioux Falls	Sept. 14	Paving streets, several kinds being considered	City Clerk.
N. J., Elizabeth	2.30 p.m., Sept. 14	19,603 sq. yds. bituminous concrete pavement, concrete gutters, cross drains, basins, etc.	J. L. Bauer, Co. Engr.
N. Y., New York	Sept. 14	Repairing and maintaining asphalt concrete	Pres., Queens.
Pa., Connellsville	8 p.m., Sept. 14	Grading, curbing and paving	J. L. Gans, Pur. Agt.
O., London	Sept. 14	Vit. paving blk., asphaltic blk., creosoted wood pavement	Village Clerk.
R. I., Providence	2.15 p.m., Sept. 14	Wood block paving and constructing new bulkhead wall	J. H. Gainer, Mayor.
Minn., Marshall	2 p.m., Sept. 14	900 ft. of 2-foot grade and bridge	H. C. Humphrey, Twn. Clerk, Soudus.
Minn., Winona	3 p.m., Sept. 14	Cement walk and building cistern for jail	C. W. Anding, Co. Aud.
Ia., Waterloo	Sept. 14	Paving portions of two streets	City Clerk.
Minn., Pine City	9 a.m., Sept. 15	Grading, turnpiking ditches and corrugated culverts	W. H. Hammond, Co. Aud.
Ky., Whitesburg	Sept. 15	Constructing one road	H. T. Day, Co. Aud.
Conn., Bridgeport	8 p.m., Sept. 15	About 1,200 sq. yds. wood or granite block paving	B. Keating, Sec. Pav & Sewer Com.
N. J., Paterson	4 p.m., Sept. 15	Macadamizing nine streets	Bd. Pub. Works.
N. J., Linden	8 p.m., Sept. 15	Grading and macadamizing	C. H. Smith, Boro. Clk.
N. Y., Amsterdam	Sept. 15	Paving with brick on concrete	J. P. Wilson, City Clerk.
O., East Youngstown	noon, Sept. 15	Constructing cross walks	A. R. Anderson, Clerk.
Va., Richmond	Noon, Sept. 15	113,000 sq. yds. permanent smooth pavement and 6,000 sq. yds. granite block	C. E. Bolling, City Engineer
Ind., South Bend	10 a.m., Sept. 15	Resurfacing pavement	Board Public Works.
Ky., Pikesburg	Sept. 15	Constructing three miles road	H. T. Day, County Judge
Ill., Rockford	Sept. 15	Macadamizing, curbing and guttering	E. Main, City Engr.
W. V., N. Cumberland	About Sept. 15	Three miles brick paving; cost, about \$30,000	A. S. Cooper, Co. Clk.
S. D., De Smet	Sept. 15	About 1,000 yards gravel	O. P. Williams, City Aud.
O., Oak Hill	Sept. 15	3,000 sq. yds. brick paving	A. E. Campbell, Eng., Jackson
O., Columbus	About Sept. 15	Grading, draining, paving and curbing; cost, about \$5,705	P. Kemper, City Clk.
O., Mt. Vernon	About Sept. 15	Two water bound macadam roads	A. C. Wolfe, Co. Engr.
Ind., Auburn	10 a.m., Sept. 15	Grading, draining and graveling	A. W. Madden, Co. Auditor.
W. Va., Kanawha Co.	Sept. 15	Improving five miles roads	F. A. Duodett, Engr.
Aziz., Prescott	Sept. 16	3,835 ft. state highway	Board Supervisors.
Ariz., Tucson	2 p.m., Sept. 16	Constructing seven miles highway	B. L. Hitch, Clerk.
Kan., Marion	Sept. 16	2,000 sq. yds. brick pavement with conc. curb. & gutter	H. A. Roland, Engr., McPherson
N. J., Trenton	2.30 p.m., Sept. 16	Paving one street	F. Thompson, City Clk.
N. J., Trenton	2.30 p.m., Sept. 16	Paving one street	F. Thompson, City Clk.
Pa., Dormont	8 p.m., Sept. 16	Grading, paving 2,350 sq. yds., and 2,470 ft. concrete curb and gutter	Street Committee.
Ill., Chicago	11 a.m., Sept. 16	Grading and paving with 7 in. Portland cement, three streets; also constructing concrete curb and gutter and paving with vitrified brick several alleys	Board Local Imp.
Mont., Bozeman	5 p.m., Sept. 17	About 1,265 sq. yds. paving, bitulithic on rock or concrete base or asphaltic concrete or macadam	A. M. Brandenburg, City Clk.
Pa., Lewistown	Sept. 17	Curbing, grading and permanently paving	G. W. Morgan, Sec. Boro. Council.
Pa., Mount Union	Sept. 17	Curbing, grading and paving	F. C. Patterson, Aud.
O., Portsmouth	Noon, Sept. 17	Paving one road	E. Wesselmann, Pres. Co. Comrs.
O., Cincinnati	Noon, Sept. 18	Constructing culvert and protection wall	C. Newhouse, Village Clerk
O., Marble Cliff	Noon, Sept. 19	Macadamizing	Co. Comrs.
Ind., Ft. Wayne	Sept. 21	Constructing Meyer road	County Commissioners
O., Painesville	Noon, Sept. 21	Brick road	Commanding Officer.
Mass., Springfield	2 p.m., Sept. 21	Repairing, paving and resurfacing about 5,880 sq. yds.	T. B. Skinner, Vil. Clk.
O., New Lexington	Sept. 21	Grading, paving with brick	C. J. Sundblad, City Clk.
Minn., Alexandria	7.30 p.m., Sept. 21	Constructing state road	A. J. Gebhard, Dir.
N. J., N. Brunswick	2.30 p.m., Sept. 21	Resurfacing with bituminous concrete	W. F. Neafsey, St. Comr.
N. J., Elizabeth	8.30 p.m., Sept. 21	Granite block paving, brick paving and curbing	C. Clark, Twn. Clk.
N. J., Westfield	8 p.m., Sept. 21	1,000 ft. concrete sidewalk	Co. Comrs.
Ind., Ft. Wayne	Sept. 21	Constructing Meyer road	J. C. Haines, Chr. Com. Sts.
N. J., Camden	8 p.m., Sept. 21	Furnishing 500 more or less tons of broken stone	J. A. Seel, Twn. Clk.
Pa., Harrison	Sept. 21	Grading, curbing and paving, one 30-ft. street	O. S. Norsman, City Clk.
Wis., Madison	Sept. 21	Improving three streets	A. B. Fletcher, Hwy. Engr.
Cal., Sacramento	2 p.m., Sept. 24	About 31 miles of grading, and 13 miles of Portland cement concrete road	County Commissioners
Ala., Centerville	Sept. 24	Grad., drain, & surfacing with chert, about 11 miles	County Commissioners
O., Cincinnati	Noon, Sept. 25	Improving one road	County Commissioners
O., Piqua	10 a.m., Sept. 29	Creosoted wood block floor on bridge	M. T. Staley, Co. Aud.
O., Columbus	Noon, Sept. 29	Use of asphalt plant for period ending June 1, 1915	S. A. Kinnear, Dir. Pub. Serv.
O., Troy	10 a.m., Sept. 29	Creosoted wood block floor on bridge	M. T. Staley, Co. Aud.
W. Va., N. Cumberland	About Oct. 1	Two miles brick road with stone or cement curb; cost, about \$22,000	A. S. Cooper, Clk.

SEWERAGE

Ind., La Porte	.....	9 a.m., Sept. 12	Constructing district sewer	W. F. Krueger, City Clk.
Neb., Minatare	.....	Sept. 12	Excavating drainage ditch	D. E. Liljenstolpe, Engr., Scottsbluff.
R. I., Providence	.....	2.15 p.m., Sept. 14	3,000 gal. pump to operate barometric condensers	J. H. Gainer, Mayor.
N. J., East Orange	.....	8 p.m., Sept. 14	Drain to include 650 ft. 30 to 33-in. reinforced conc. pipe and 1,500 ft. 8-24-in. vit pipe	L. E. Rowley, City Engineer

BIDS ASKED FOR

STATE	CITY	REC'D UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
Ill.	Cicero	8 p.m., Sept. 14	House drains and water service pipes	Board Local Impt.
Minn.	Madelia	Sept. 14	Catch basin	C. P. Dahl, Vil. Clk.
la.	Waterloo	Sept. 14	Sewer on several streets	City Clerk.
Minn.	Morris	Sept. 14	Four catch basins, one manhole and 1 lamphole	C. T. Dahl, Vil. Clk.
la.	Washington	Noon, Sept. 14	Material and constructing drain, about 18,000 ft. tile, 12-30 inch	H. W. Benn, Co. Aud.
Cal.	Sacramento	11.30 a.m., Sept. 15	Constructing discharge pipe for sewage pumping station	M. J. Desmond, City Clk.
la.	Clarinda	7.30 p.m., Sept. 15	Sanitary sewer of salt glazed 6-inch pipe, approximately 581 ft., and second sewer same diameter, 81 ft.	
Ill.	Rockford	About Sept. 15	Several thousand feet of sewer pipe	E. Main, City Engr.
N. Y.	New York	Noon, Sept. 15	Temporary sanitary sewer with appurtenances	Pres. Boro. Richmond.
Utah	Salt Lake City	10 a.m., Sept. 15	Extending one sewer	K. A. Scheid, City Rec.
Minn.	Morris	8 p.m., Sept. 15	Constructing one sewer	A. S. Siverts, Jr., City Engr.
Wis.	Sheboygan	4 p.m., Sept. 15	Making necessary sewer, water and gas connections	Board Public Works.
O.	Struthers	Noon, Sept. 16	Storm and sanitary sewers with house connections	J. Richards, Clerk
Ind.	Kensselaer	Sept. 16	Constructing drain ditch and laterals	Clifton J. Hobbs, Kersey
Conn.	Bridgeport	8 p.m., Sept. 16	Constructing sewer, distance 500 ft.	E. Keating, Secy. Paving & Sewer Com.
Mont.	Bozeman	5 p.m., Sept. 17	Sanitary sewer, about 284 ft. 6-in. pipe, 56 ft. 6x6 Y branches, manhole cover, trenching, etc.	A. M. Brandenburg, City Clk.
Ida.	Pocatello	Sept. 17	Trunk line storm and water sewer	City Clerk.
Tex.	Beaumont	Sept. 21	Four drainage ditches, aggregating 21.4 miles	Drainage Comrs.
N. J.	Elizabeth	8.30 p.m., Sept. 21	Constructing sewers	W. F. Neafsey, St. Comr.
N. J.	Westfield	8 p.m., Sept. 21	3,500 ft. 8-10-inch sanitary sewer	City Clk.
Cal.	San Bernardino	Sept. 21	Constructing sewers in two streets	City Council.
Tex.	San Antonio	Sept. 21	Constructing sanitary sewers	City Clerk.
Ga.	Savannah	Noon, Sept. 21	Storm and sanitary sewers. (See Proposal ad.)	E. R. Conant, Ch. Engr.
la.	Forest City	Sept. 22	Constructing ditches and tile laterals	C. P. Nelson, Co. Aud.
O.	Port Clinton	Sept. 23	Constructing sewers	W. H. Williamson.
N. J.	Trenton	2.30 p.m., Sept. 23	Constructing sewer in one street	F. Thompson, City Clk.
la.	Algona	2 p.m., Sept. 30	About 50,000 ft. 6-32-inch tile drain	D. E. Norton, Co. Aud.
Ala.	Bay Minette	Sept. 30	Constructing water works, sewers & electric light plant	W. D. Stapleton, Mayor
La.	New Orleans	Noon, Oct. 2	Extensions to drainage system	F. S. Shields, Secy. Sewerage & Water Bd.

WATER SUPPLY.

N. J.	Wellington	Sept. 14	Furnishing, delivering and laying 745 ft. 4-in. c-i. water mains, with specials, valves and hydrants	N. O. Berry, Boro Clerk.
N. Y.	Lestershire	Noon, Sept. 14	2,000,000-gallon condensing pumping engine	Water Commissioners
Minn.	Virginia	8 p.m., Sept. 14	Digging well	R. J. McGhee, Clk. School Bd.
N. C.	Clinton	Sept. 15	Water works system	A. B. Crumpler, Mayor.
D. C.	Washington	2 p.m., Sept. 15	1,000 feet 8-inch c. i. pipe	District Comrs.
N. Y.	New Amsterdam	Sept. 15	30 or more wash borings	J. P. Wilson, City Clerk.
N. Y.	Brooklyn	2 p.m., Sept. 16	Retubing five Scotch marine boilers	W. Williams, Com. W. Gas, &c.
Neb.	Chadron	6 p.m., Sept. 18	Furnishing for water system dams for storage and filtration, concrete floor, various concrete works, 1,600 ft. of drain tile, installing gates, etc.	City Clerk.
Minn.	Columbia Hgts.	8 p.m., Sept. 19	Extending water works	C. R. Holstrom, Rec.
Man.	Winnipeg	Sept. 19	84 miles of aqueduct, \$3,729,000	Greater Winnipeg Water Dist. Quartermaster.
Ark.	Ft. Logan H. Roots	Sept. 20	Cleaning water mains	A. M. Taxton, City Clk.
Miss.	Vicksburg	5 p.m., Sept. 21	Water works system and filters	J. J. Molter, Dir. P. S.
O.	Sandusky	Sept. 22	Constructing 42-inch intake	
O.	Cleveland	Sept. 23	Three vertical triple expansion crank and flywheel pumping engines	Comr. Pur. & Supplies.
Neb.	Hastings	Sept. 28	1,630 ft. main, 4-inch; 1 hydrant, and 2 water gates; cost about \$1,500	W. H. Fuller, Asst. City Engr.
Neb.	Bridgeport	Sept. 28	Furnishing and delivering 8,000 ft. 4-in. Class D bell and spigot c-i. water pipe, 4,500 lbs. special castings, 10 4-in. gate valves, 12 fire hydrants, 4-in. hub, etc.	Board Village Trustees.
O.	Brewsters	About Oct. 1	Water works system; cost \$10,000	W. J. Sherman, Co. Engr., Toledo.
O.	Fostoria	About Oct. 1	140 million gallon capacity rip-rap or concrete reservoir	C. Latshaw, City Engr.
H. I.	Pearl Harbor	10 a.m., Oct. 6	Furnishing water meter	Bureau Sup. & Accts., Navy Dept., Wash., D. C.

LIGHTING AND POWER.

N. J.	Butler	8 p.m., Sept. 14	Municipal lighting plant	E. J. Fritz, Boro Clerk
H. T.	Pearl Harbor	10 a.m., Sept. 15	Electrical supplies	S. McGown, Paym. Genl., U. S. N. Wash., D. C.
Minn.	St. Cloud	Noon, Sept. 15	Power plant equipment	C. L. Pillsbury Co., Engrs., Minneapolis
N. Y.	New York	Sept. 15	Electric work in pavilion	Board Health.
Me.	West Pownal	Noon, Sept. 18	Constr. power plant and transmission line	C. J. Heiden, Superintendent
D. C.	Washington	Sept. 22	Over 300,000 ft. of various kinds of wire, insulating conductor, etc.; 200 iron boiler tubes; 2 bucket turbine cutting machines, etc.	Bureau Sup. & Accts., Navy Dept.

FIRE EQUIPMENT.

Neb.	Fremont	8 p.m., Sept. 14	Furnishing one auto combination fire truck, with tanks, etc.; cost about \$4,000	J. Gumb, Chr. Pub. Wks.
W. Va.	Clarksburg	Sept. 15	Motor combination chemical and hose	Fire Committee.

BRIDGES.

O.	Cleveland	10 a.m., Sept. 12	Constructing culvert	E. G. Krause, Clerk
Ind.	Salem	1.30 p.m., Sept. 12	Four concrete bridges	F. S. Munkelt, Co. Aud.
Ind.	Winchester	Sept. 12	County line bridge	County Auditor.
O.	Duncan Falls	Sept. 14	Reinforced concrete viaduct	F. C. Werner, Clerk of Comrs.
Tex.	Anahuac	Sept. 14	Constructing several bridges and culverts	R. J. McMurray, Co. Judge.
Kan.	Manhattan	Sept. 15	Five concrete bridges	County Comrs.
la.	Anamosa	Sept. 15	Constructing bridge	E. J. Hines, Co. Aud.
Pa.	New Castle	2 p.m., Sept. 15	Concrete arch bridge	J. R. La Moree, Clk. Co. Comrs
Tenn.	Chattanooga	Sept. 15	Bridge	Hamilton Co. Bridge Comm.
Md.	Annapolis	Noon, Sept. 15	Bridge and paving approaches	O. E. Weller, Chr. State Road Com., Baltimore
Ala.	Bay Minette	Noon, Sept. 15	Reinforced concrete bridge	Nicol & Hume, Mobile.
Pa.	Pittsburgh	Noon, Sept. 18	Elliptical arch reinforced concrete stone faced bridge	R. J. Cunningham, Co. Cont.
O.	Cleveland	10 a.m., Sept. 19	Two concrete culverts and one arch	Board Co. Comrs.
Kan.	Wichita	Sept. 20	Reinforced concrete substructure, 3 bridges & 2 culverts	E. W. Moore, County Engr.
Minn.	Buffalo	2 p.m., Sept. 21	Bridge over one river	C. A. Berg, Aud.
Ind.	Indianapolis	Sept. 22	One reinforced concrete bridge	C. MacGuire, Comr.
Ind.	Indianapolis	10 a.m., Sept. 22	One bridge	W. T. Patten, Co. Aud.
Pa.	Harrisburg	11 a.m., Sept. 23	Two concrete bridges	H. W. Dough, Co. Cont.
Kan.	Concordia	Noon, Sept. 24	Six reinforced concrete bridges	State Engr., Manhattan
O.	Cincinnati	Noon, Sept. 25	Concrete	A. Reinhardt, Clk. Comrs.
Ont.	Toronto	Noon, Oct. 5	Bridge over Bloor Street	H. C. Hocken, Mayor.

BIDS ASKED FOR

STATE	CITY	REC'D UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
MISCELLANEOUS.				
Minn.	Albert Lea	Sept. 12	Constructing ditch No. 25	City Clerk.
S. C.	Spartansburg	Sept. 14	Erecting city hall in jail building	J. F. Loyd, Mayor
N. Y.	Lestershire	noon, Sept. 14	Wet vacuum pump sand chamber, with automatic vacuum system	Water Comrs.
N. C.	Charlotte	Noon, Sept. 14	Garbage incinerator building	A. W. Wearn, City Clerk
Fla.	Jacksonville	3 p.m., Sept. 14	One automobile, to cost \$750	G. M. Powell, Chr. Com. P. W.
Fla.	Jacksonville	3 p.m., Sept. 14	One or more combination street sprinklers and sweepers	G. M. Powell, Chr. Com. P. W.
N. Y.	New York	2 p.m., Sept. 14	Furnishing and delivering chloride of lime	W. Williams, Comr. Water S.
Va.	Roanoke	Sept. 15	Constructing new city hall	City Engr. Gibboney.
Ill.	Chicago	11 a.m., Sept. 15	Constructing one ward building	L. E. McGann, Comr. P. Serv.
N. Y.	Amsterdam	Sept. 16	Constructing garbage incinerator plant	Board of Health.
Wash.	Seattle	Sept. 16	Furnishing a Gantry crane	Bd. of Seattle Comm.
N. Y.	New York	11 a.m., Sept. 17	Furnishing and delivering 1,500 bbls. Portland cement	Pres. Boro. Brooklyn.
Cal.	San Francisco	Sept. 18	Constructing tunnel & appurtenances under Twin Peaks	F. J. Churchill, Sec. B. P. W.
N. Y.	Fire Island	11 a.m., Sept. 19	One-story terra cotta and concrete building	H. R. Stanford, Ch. Bur. Docks, Navy Dept., Wash., D. C.
Mich.	Detroit	10 a.m., Sept. 21	Machinery and equipment for garbage disposal plant	Dept. Public Works.
N. J.	Camden	8 p.m., Sept. 21	Furnishing city about 500 sq. yds. broken stone	J. C. Haines, Chr. Sts.
Miss.	Meridan	Sept. 22	Constructing \$100,000 city hall	City Clerk.
O.	Cleveland	Sept. 22	Air washers, humidifiers, tempering coils, etc.	Supv. Architect, Wash., D. C.
O.	Mansfield	Noon, Sept. 23	Combination patrol and ambulance, motor driven; also police and signal system	C. H. Hughes, Dir. P. S.
D. C.	Washington	3 p.m., Sept. 24	Postoffice building at Mandan, N. D.	O. Wenderoth, Supv. Arch.
S. C.	Charleston	11 a.m., Sept. 26	Three 15-ton locomotive cranes	H. R. Stanford, Ch. Bur. Yds. & Docks, Navy Dept., Washington, D. C.
Tex.	Amarillo	3 p.m., Sept. 28	Constructing complete 3-story post office and Court House	O. Wenderoth, Sup. Arch., Treas. Dept., Wash., D. C.
Cal.	San Francisco	Sept. 30	Constructing Twin Peaks tunnel (date extended)	City Engineer
D. C.	Washington	3 p.m., Sept. 30	Supplying metal vault equipment for stamp vault	O. E. Wenderoth, Supv. Arch., Washington, D. C.
D. C.	Washington	2 p.m., Oct. 15	Collection and disposal of garbage, etc.; optional period	District Comrs.
Pa.	Philadelphia	Oct. 16	Garbage disposal	Morris L. Cook, Dir. Pub. Wks.

STREETS AND ROADS

Birmingham, Ala.—City Engineer Julian Kendrick will prepare ordinance for improving Ave. C and 35th St., to cost about \$14,000.

Birmingham, Ala.—Ordinance has been adopted providing for certain improvements on 10th Ave., Wylam, from 41st St. to 42d St., and on 7th Ave., Wylam, from 41st to 43d St., at estimated cost of \$1,000. Also ordinance No. 791-C, providing for certain improvements on 35th St. from Avenue C to Avenue E, at estimated cost of \$4,300.

Meridian, Ala.—Meeting of citizens has been held for purpose of devising ways and means to have county good roads connected with city paving, which is needed in five instances. It was decided to petition good roads commission and board of supervisors to issue additional bond issue for \$50,000, which will be used to have gaps filled in and also to complete good roads of Beat 1 to the line of Beat 2, where it will be carried to the state line, and where it will directly connect with good public highway from Montgomery, already agreed upon by Alabama good roads commission.

Pasadena, Cal.—Four bids have been submitted for work on Meridith Ave. and five for work on Holliston Ave., as follows: Meridith—Paving, Charles A. Baldwin, 4.69 cts. per sq. ft.; Thomas C. Breitenstein, 4.7 cts.; H. E. Cox, 4.65 cts.; George Snyder Contracting Co., 4 3/4 cts.; grading, 52 cts. per lin. ft. Holliston—Paving, Charles A. Baldwin, 7.24 cts. per sq. ft.; H. E. Cox, 7.4 cts.; J. C. Kinsman, 7 1/4 cts.; Thomas C. Breitenstein, 7.2 cts.; George Snyder Contracting Co., 8 cts.; grading, 52 cts. Bids were referred to Commissioner T. D. Allin.

Sacramento, Cal.—Construction of 45 miles of roadway in Siskiyou, Glenn, Contra Costa, Santa Clara and Santa Barbara Counties, will be undertaken by State Highway Commission in near future, circulars having been sent out calling for bids to be submitted not later than September 21. Following are roads to be improved: Siskiyou County, from Weed to Dunsmuir, about 17 miles in length, to be graded. Glenn County, from southerly boundary to Willows, about 8.5 miles in length, to be built of Portland cement concrete. Contra Costa County, from Eckley to Martinez, about 7 miles in length, to be graded. Santa Clara County, from southerly boundary to Los Gatos, about 7.5 miles in length, to be graded. Santa Barbara County, from Alcatraz to Las Cruces, about 5 miles in length, to be built of Portland cement concrete.

Pueblo, Colo.—City engineer has been instructed to prepare plans and specifications upon which bids may be based for improvement of North Side District and City Attorney Alva B. Adams has started preparation work on ordinance

defining district and improvements that are to be made.

Bridgeport, Conn.—Clerk of board has been instructed to advertise for bids for paving of Elm St., from Broad to Harrison, with wooden blocks.

Naugatuck, Conn.—It has been voted that borough engineer be instructed to prepare plans and specifications and advertise for bids for sheet asphalt pavement with concrete base on Church St. from Maple St. to Rubber Ave., bids to be opened on Sept. 15, 1914.

Stamford, Conn.—Improvement of two principal roads leading north from city to State line is being considered.

Canton, Ill.—Proposition to pave West Vine St. is being discussed.

Freeport, Ill.—Park commissioners expect to soon award contract for brick paving of Taylor Ave.

Galesburg, Ill.—Three bids have been received on North Cedar St. pavement by Board of Local Improvements, but letting of contract has been deferred. Bids received were: M. Heckard and Co. of Canton, \$28,993.52; P. H. Tierman of Macomb, \$29,480.79, and J. B. McAuley, \$28,589.44.

Peoria, Ill.—Bids have been ordered advertised for paving with brick alley in block 40, Ballances addition. Board has approved ordinance for paving of Windom St., from Bourland to Elmwood, with reinforced concrete.

Springfield, Ill.—Bids for new state aid road south of Morrison in Whiteside County have been rejected as too high.

Springfield, Ill.—Sangamon county's representatives of Springfield-Hannibal division of Pike's Peak Ocean to Ocean Highway association have decided to accept route west through Washington park, along old Jacksonville Rd. to Old Berlin, thence south through Berlin, thence west to Morgan county line.

Waukegan, Ill.—Bids are being received for paving of Washington St.

Columbus, Ind.—J. F. Wild & Co., Indianapolis, have bought \$33,000 of Bartholomew County 10-year 4 1/2 per cent. non-taxable road bonds.

Evansville, Ind.—County Treasurer Carl Lauenstein, of Vanderburg County, has sold \$7,500 road improvement bonds to Jacob Kissinger, a Perry Township farmer.

Fort Wayne, Ind.—Park Board now is ordering grading of Rudisill Blvd., from Calhoun St. to Hanna St.

Indianapolis, Ind.—Question of bond issue to cover expense of proposed concrete roads in Washington township has been discussed. It is estimated that bond issue of \$320,000 would be required to complete the work. Plan under consideration is to construct roads in township of concrete, 16 ft. wide, similar to those near Detroit.

Kokomo, Ind.—Road bonds in sum of \$4,100 have been sold.

Shelbyville, Ind.—Bids will be received until 10 a. m., Sept. 12, by W. A. McDonald, Treasurer Shelby County, for purchase of \$4,480 highway improvements bonds of county.

Dubuque, Ia.—City Council has authorized improvement of various streets.

Council Bluffs, Ia.—Grading of North Broadway is planned.

Oskaloosa, Ia.—Resolution has been adopted for grading, paving, curbing and guttering of various streets in city. T. H. Carlin is City Clerk.

Fort Scott, Kan.—Resolution has been adopted for paving of East Wall St. with vitrified brick, on 4-in. concrete base.

Lawrence, Kan.—Bonds have been issued for street improvements. F. D. Brooks is City Clerk.

Maysville, Ky.—The good roads movement in this county has now taken definite shape, and after Fiscal Court orders election to issue \$100,000 worth of bonds and \$50,000 is secured additional from Government, it is County Judge Rice's intention to first rebuild Maysville and Lexington turnpike roadway from north to south.

Newport, Ky.—County Fiscal Court has passed resolution directing that question of issuing bonds in sum of \$150,000 for purpose of purchasing all toll roads in county be placed on ballot at coming election.

Cumberland, Md.—No bids have been received for bond issue of \$150,000 for street improvements, which will result in the holding up of paving of 33 streets. Following are lowest bids received on different materials: Brick pavement—Ridge Bros., 9 streets, \$96,394.21; H. C. Brooks Co., 10 streets, \$60,047.80; Brady Bros., 6 streets, \$67,322.85; Thos. S. Kean, 5 streets, \$23,763.09; F. J. Maguire, 2 streets, \$11,236.40; Vang Constr. Co., 1 street, \$1,473; total, \$260,047.80. These 33 streets aggregate 101,696 sq. yds., averaging \$2.45 1/4 per sq. yd. Bitulithic pavement, 7 per cent. less than brick—Atlantic Bitulithic Co., 27 streets, \$203,639.51; West Construction Co., 3 streets, \$20,848.67; total, \$224,488.68. These 30 streets aggregate 91,481 sq. yds., averaging \$2.45 1/2 per sq. yd. Sheet asphalt pavement, 12 per cent. less than brick—F. J. Maguire, 19 streets, \$140,054.33; West Construction Co., 2 streets, \$21,741.57; total, \$152,983.23. These 21 streets aggregate 66,390 sq. yds., averaging \$2.40 per sq. yd. Asphalt concrete, 20 per cent. less than brick—F. J. Maguire, 19 streets, \$120,371.65; West Constr. Co., 2 streets, \$21,741.57; total, \$142,113.18. These 21 streets aggregate 66,390 sq. yds., averaging \$2.14 per sq. yd. Amiesite, 25 1/2 per cent. less than brick—Whiting-Turner Co., 5 streets, \$58,263.22; Kean & Clark, 4 streets, \$32,228.07; total, \$91,228.07. These 9 streets aggregating 47,703 sq. yds., averaging \$1.92 per sq. yd. Asphalt Block, 15 per cent. more

than brick—Kean & Clark, 15 streets, \$160,618.18, aggregating 54,353 sq. yds., averaging \$2.95 per sq. yd. Wood block, 20 per cent. more than brick—F. J. Maguire, 19 streets, \$208,637.82; Brady Bros., 1 street, \$9,768.50; total, \$218,406.32. These 20 streets aggregate 66,725 sq. yds., averaging \$3.27 1/2 per sq. yd.

Cumberland, Md.—Road Directors have asked for additional appropriation of \$10,000 for road use.

Cumberland, Md.—County Commissioners have appropriated \$400 for new pavement around Alleghany County Academy.

Fittsfield, Mass.—City Council is considering expenditure of \$25,000 for paving West St. with vitrified brick. J. P. Moore is Mayor.

Swampscott, Mass.—Humphrey St. will be paved with wood block in spite of protest from citizens.

Blue Earth, Minn.—City Council has voted to pave five blocks on Main St.

St. Paul, Minn.—Council has authorized city purchasing agent to advertise again for bids for construction of curb upon various streets.

St. Paul, Minn.—Approximately 86 miles of proposed state rural highways in Winona county have been approved tentatively by State Highway Commission, involving expenditure of \$435,000.

St. Joseph, Mo.—Ordinance has been passed to provide for paving, with concrete, highway from Seventh St. and Highland Ave. to Second St. and Hamburg Ave., via Seventh St., Independence Ave., Fifth St., and Hamburg Ave., and constructing concrete sidewalks, steps, and curbing there along.

Nashua, N. H.—New bids will be received for proposed work on Bridge St. on Sept. 14.

Passaic, N. J.—Ordinance has been adopted for laying of permanent pavement, etc., upon Erie St. and upon Franklin Ave., entire length of each street.

Patterson, N. J.—A boulevard from this city to Passaic along Passaic River is said to be contemplated by President Charles D. Cooke of Board of Public Works as next work of improvement to be undertaken by city.

Patterson, N. J.—Resolution has been passed by Board of Public Works asking that \$25,000 be appropriated for street improvements, consisting of grading, curbing and guttering.

Trenton, N. J.—Ordinance has been passed providing for paving of Stuyvesant Ave., from Whittiesey Road to City Line.

Washington, N. J.—The Warren Board of Freeholders has decided to resurface macadam road between Washington and Hackettstown, distance of 10 miles. It is estimated cost will be between \$5,000 and \$6,000. Road committee is advertising for bids.

Binghamton, N. Y.—Final arrangements for construction of last 2 miles of Harpursville-Sanitaria Springs road have been made by supervisors comprising county highway committee.

Brooklyn, N. Y.—Controller Prendergast has certified contracts aggregating \$240,000.

Carthage, N. Y.—Village of Carthage is negotiating with contracting firm, Ballard & Mahar, of Oneida, sale of rock from village quarries for use on Bridge St., West Carthage paving job, which contract this firm has been awarded.

Lockport, N. Y.—No bids have been received for purchase of Walnut St. paving bonds in sum of \$26,321.25.

Niagara Falls, N. Y.—Council has ordered resurfacing of Buffalo Ave at estimated cost of \$3,300 and paving or macadamizing of Whirlpool St. T. H. Hogan is City Clerk.

Penn Yan, N. Y.—Board of Supervisors has approved contract presented by State Highway Department for building 6 miles of road between Keuka St. in Penn Yan to point in town of Jerusalem near Esperanza. Inside village of Penn Yan for distance of 47-100 miles road will be paved with brick and from corporation limits to end of road 5.53 miles the construction will be water-bound macadam. Total estimated cost of road is \$95,300, of which share of state is \$48,484, of county \$22,816, of village of Penn Yan \$24,000.

Schenectady, N. Y.—Three bids for repaving Hamilton St. with cobblestone have been received. The bids for approximately 3,000 sq. yds. of cobblestone paving were: T. R. Crane, \$1,260; W. D. Goodale, \$1,485, and Kehoe & Bisset, \$1,890.

White Plains, N. Y.—Bids will be received by Board of Trustees until 8 p. m., Sept. 15, for purchase of highway bonds in sum of \$50,982. W. H. Carpenter, Jr., is Village Clerk.

Cincinnati, O.—Resolutions for improvement of various streets are being considered.

Geneva, O.—Survey is being made for the Trumbull-Geneva improved road.

Hamilton, O.—Contract for new brick road extending from south line of city on route of Main Market Rd. No. 7 will be let before Oct. 15.

Marble Cliff, O.—Bids will be received until noon, Sept. 19, for purchase of bonds in sum of \$17,000 for street improvements. C. Newhouse is Clerk of village.

Marion, O.—Ordinance has been adopted to provide for issuing bonds in sum of \$12,500 to pay corporation's part of certain street improvements.

Springfield, O.—It is planned to finish paving of Main St. next year as far as Belmont Ave.

Eugene, Ore.—Purchase of another street flusher is recommended.

Eugene, Ore.—Ordinances have been passed approving plans and specifications of engineer for street and sewer improvements.

Portland, Ore.—City Council has passed ordinance for improving of Main, "the depot street," from west line of present city limits to east line of limits, 30 ft. wide, with water bound macadam pavement, to be 8 ins. thick in center and 6 ins. thick on edges, and Third St., from the south end of present pavement on Maple St. to road leading towards Carlton and the road leading towards Carlton from Third St. to south line of city limits with water bound macadam 14 ft. wide and 8 ins. thick in center and 6 ins. thick on sides, after being thoroughly rolled with 10-ton roller.

Beaver Falls, Pa.—Linden Alley will be paved with concrete between 8th and 9th Aves., and 6th and 7th Sts.

Northampton Heights, Pa.—Ordinance has been adopted for issuance of \$30,000 in bonds for construction and laying of sidewalks, curbs and gutters. H. A. Bodder is Borough Secretary.

Philadelphia, Pa.—Contractors will be invited to submit bids for variety of street work to value of \$225,000, which will include grading, asphalt paving and repaving, vitrified block paving, wood block paving and resurfacing country roads.

Waynesboro, Pa.—County Commissioners have agreed to join with Supervisors in petition to State Highway Department for state aid in grading and macadamizing six miles of road between northern terminus of Church St. and Mont Alto borough limits. Improvements are to cost \$5,000 a mile. Of total cost, \$30,000 state is asked to pay \$15,000, county will pay \$7,500 and townships, through their supervisors, \$7,500.

Dallas, Tex.—City Engineer J. M. Preston has finally approved contracts for paving 12 city streets from proceeds of the 25c. paving tax and contracts will be executed within next day or two so work may proceed. This will mean expenditure of \$150,000 of city funds, while property owners share will be \$300,000.

Hartland, Wis.—Sum of \$1,200 will be spent on that part of Oconomowoc, Milwaukee Road from eastern line of Delafield westward.

Madison, Wis.—Dane county is improving 30 miles of road under state supervision this season at cost of \$200,000.

Milwaukee, Wis.—In communication to Common Council public land commission asks that proposed extension of 11th Ave. be made to conform with plan of commission for broad artery highway from city to Cudahy on and including this highway.

CONTRACTS AWARDED.

Linden, Ala.—To J. J. Dunnivant, Dothan, Ala., at \$7,000 for grading, draining and surfacing with gravel 1 1/2 miles state aid road.

Oroville, Cal.—To Clark & Henery Co., Sacramento, Cal., contract for paving four streets around Court House, price \$7,202.

Pasadena, Cal.—To Theodore C. Breitenstein, contract for improvement of Holliston Ave., his bid being \$2,469.60, and contract for improvement of Meredith Ave. to H. E. Cox for \$1,627.50.

Sacramento, Cal.—For constructing State highway in Santa Barbara county, Div. V, Route 2, Section A, to Arthur S. Brent Construction Co., Los Angeles, Cal., at \$61,226.25. For highway in Kern county, Div. VI, Route 4, Section B, to Lynn S. Atkinson, Los Angeles, at \$174,346. Lowest bidder for highway in San Diego county, Div. VII, Route 12, Section B, was C. L. Hyde Const. Co., of San Diego, at \$12,059.50.

Sacramento, Cal.—State Highway Commission Aug. 31 opened bids for construction of 35.6 miles of highway in Colusa, Yuba, San Luis, Obispo, Kern and Orange Counties. Roadways to be built together with lowest bidder in each contract are as follows: San Luis Obispo County, from Atascadero Creek to Paso Robles, about ten miles; engineers' estimate, \$71,709.40; materials, furnished by the State, \$56,736.10; J. W. Calbeck, San Diego, \$79,294.20. Orange County, from Irvine to Santa Ana, about 7.4 miles; engineers' estimate, \$47,990.62; materials furnished by State, \$17,374.50; White & Gaskill, Long Beach, \$37,935.50. Yuba County, from the southerly county boundary to Morrison's crossing, about 3.3 miles; engineers' estimate, \$19,943.07; materials furnished by State, \$14,573.16; E. M. Whitlock, San Francisco, \$24,303.80. Colusa County, from Berlin to Colusa Junction, about 12.6 miles; engineers' estimate, \$67,815.27; materials furnished by State, \$65,443.84; C. L. Schaad, Williams, \$67,179.20. Kern County, from the southerly county boundary to a point about 2.3 miles south of Rose Station; engineers' estimate, \$86,125.23; materials furnished by State, \$4,235; A. C. McLean Construction Company, San Francisco, \$68,004.

Yreka, Cal.—For constructing Shasta Springs McCloud Road, to Rufus Bram, Dunsuir, at \$5,700.

Bristol, Conn.—To Charles H. Terry, of Bristol, contract for state road from Park St. to Plymouth town line. It calls for concrete roadway.

Bristol, Conn.—Contract for sidewalk and curb work on Union St. has been awarded to Cosmo Vacca & Company at 10 cts. for walk, 25 cts. for curb, 5 cts. for resetting curb, and 40 cts. a ft. for new bluestone curb.

Hartford, Conn.—By State Highway Commission contracts for state road work as follows: Town of Middleburg, Middleburg-Southbury road, a section of gravel road about 5,883 ft. to Louis Longhi & Bro., Torrington, Conn., for approximately \$6,796; town of Cromwell, a section of trap rock macadam road, about 2,175 lin. ft., Stafford & Mather, Hartford, Conn., for approximately \$8,876; city of Norwalk, a section of brick and amiesite pavement, about 1,237 lin. ft., to The Charles T. Eastburn Co., Mt. Vernon, N. Y., for approximately \$5,953; town of Middletown, a section of trap rock macadam road, about 1,690 lin. ft., to Stafford & Mather, Hartford, Conn., for approximately \$8,000; town of Hadam, an I-beam bridge to The Goodman & Trumbull Co., Litchfield, Conn., for approximately \$1,658.

Ottawa, Ill.—Joseph Leix was only bidder for paving State St. alongside South Ottawa Park, between Glover and Campbell Sts. His bid was \$1,734.98.

Peoria, Ill.—By narrow margin of \$2.78 McElwee & Bushel, Peoria, were awarded contract for paving Glen Oak Ave., 30 ft. wide, with brick, from Knoxville to State. Their bid was \$10,733.80, while that of John McAllister was \$10,736.58.

Springfield, Ill.—By Board of Local Improvements for brick pavement in Ash St., from 6th to 15th Sts., to J. E. Bretz, Springfield, at \$1,625 per sq. yd. for pavement, 55 cts. per lin. ft. for sandstone curb.

Waukegan, Ill.—Anton Dudek is low bidder on construction of cement sidewalks. Work consists of about 1,271 ft.

Bloomington, Ind.—To Stewart & Stewart, city, at \$21,500, for 8,000 sq. yds. sheet asphalt, 3,350 lin. ft. cement curb, 20,500 sq. ft. cement sidewalks, and for laying 1,781 lin. ft. 10-in. to 18-in. sewer pipe on Kirkwood Ave.

Fort Wayne, Ind.—By Board of Works, to Moeller Construction Co., Fort Wayne, contracts for paving alley between Fairfield and Fulton, from Breckenridge to Jefferson, and alley west of Webster, from Sutfenfield to Taber Sts.

Indianapolis, Ind.—Contract for paving New York St., from Tacoma Ave. to Tuxedo St., with first grade asphalt has been awarded to American Construction Company, Indianapolis, at \$2.80 a lineal foot on each side of the street.

Anamosa, Ia.—To Thos. Cary & Sons, Clinton, Ia., at \$1.63 per sq. yd., for 7,000 yds. vertical fiber brick paving with asphalt filler.

Fort Dodge, Ia.—By City Council, contract for two blocks of asphaltic concrete paving on Central Ave. between 17th and 19th Sts., and in alley in rear of Snell buildings, to Bryant Asphalt Co., Des Moines, Ia.

Parsons, Kan.—For paving with asphaltic concrete and curbing with carthage stone, to A. Jaicks Co., 115 American Bank Bldg., Kansas City.

Neodesha, Kan.—For paving 4 blocks and alley, to Green & Cullen, Independence, Mo., at \$37,925.

Baltimore, Md.—Contract for grading and fills for Hanover St. bridge will be awarded to Lucke Construction Co., of Roanoke, Va., at 24.4 per yd. Work consists of about 225,000 cu. yds.

Uxbridge, Mass.—To T. J. Quinn, Ashton, R. I., at \$10,350, for construction of section of state highway.

Coleraine, Minn.—For constructing 7½ miles Spring Lake Rd. by County Board to Henry Volke, at \$10,000.

St. Paul, Minn.—To Beecher & Co. for curbing of Como Ave. from Carter Ave. to Eustis St. at \$6,110.

St. Joseph, Mo.—To Olson & Campbell, at \$0.157 per cu. yd., for grading of Noyes Blvd., from intersection of Osage St. and Ashland Ave. to Messanie St.

Lewiston, Mont.—To J. C. McGuire, Butte, at \$36,000, for paving of Broadway from First to Fifth Ave. with bitulithic.

Lodi, N. J.—Report from Borough Engineers Bowe and Wessels on bids received for improvement of various streets is as follows: Hamilton Ave.—Gerritsen Const. Co., \$3,627.11; DiNapoli & Toriello Const. Co., 11 W. Broadway, Hackensack, \$3,464.65; Edward English, 14 N. Dean St., Englewood, \$3,504.51; S. Guardalibeni, Lodi, \$3,229.05; Corabelle Ave.—Gerritsen Const. Co., \$418.96; DiNapoli & Toriello Const. Co., \$333.29; S. Guardalibeni, \$309.70; Dell Glen Ave., Arnot St. to Contant Ave.—Gerritsen Const. Co., \$3,244.96; DiNapoli & Toriello Const. Co., \$2,790.73; Edward English, \$2,379.18; S. Guardalibeni, \$3,029.50; Dell Glen Ave., First St. to Myrtle St.—Gerritsen Const. Co., \$444.35; DiNapoli & Toriello Const. Co., \$448.35; S. Guardalibeni, \$466.00. Contracts were awarded to lowest bidders.

New Brunswick, N. J.—Five paving contracts have been awarded, three to Conrad Sebott of New Brunswick and two to Thomas H. Riddle, New Brunswick. Material selected was concrete in each instance.

Newark, N. J.—Contract for paving, grading, curbing and flagging of new portion of Branford Pl. has been awarded to Alexander J. Milmo, 82 Littleton St., Newark, for \$32,265.

Passaic, N. J.—By County Board of Freeholders for improving Franklin Ave. and Erie St. with sheet asphalt and granite block to George F. Brackett, of Ridgewood, at about \$58,000.

Passaic, N. J.—To De Vogel Contracting Co., Passaic, N. J., contracts for improving Dock and Water Sts.

Perth Amboy, N. J.—By Water Board, to John Quinlan, of South Amboy, for grading two filter basins at Runyon, at about \$1,200.

Little Falls, N. Y.—By Board of Public Works for paving and curbing Elizabeth St. to R. D. Cooper of Little Falls at \$3,461 for paving and \$1 per ft. for straight curbing, and \$1.55 per ft. for circular.

Lestershire, N. Y.—By Board of Trustees to William Murphy for curb and gutter on east side of Harrison St., and to F. E. Whittemore on west side. Both are local contractors.

Newburgh, N. Y.—Contracts to pave William St. with Porter brick and stone curbing, to James L. Kehoe, at \$24,975.25.

Rochester, N. Y.—Contract for Mill St. Medina block pavement has been awarded to Thomas Holahan for \$20,388. That for McFarlin St. brick pavement to Holahan for \$2,080.

Rome, N. Y.—The Warren Bros. Co. of 59 Temple Pl., Boston, Mass., through their representative, C. E. Kennedy, has closed contract with the Rome Brass & Copper Co. for paving Bouck St. with their bitulithic pavement, on concrete base, from East Dominick St. to the Central Railroad industrial tracks. Pavement is to be 26 ft. in width between curbing. Curbing is to be best grade Medina sandstone.

Bucyrus, O.—To Rimelspach & Thoma, Fremont, O., at about \$56,600, for construction of stone roads in Crawford County.

Cincinnati, O.—For paving Jefferson Ave. with asphalt and granite, to Kirchner Construction Co., 221 West 9th St., at \$32,526.

Columbus, O.—By State Highway Department following contracts: Carroll County, Section "D," Carrollton-Salineville Rd. (waterbound-macadam), to E. H. Cowan, Williamson Bldg., Cleveland, at \$14,900. Columbiana County, Section 2, Unity-Salem Rd. (brick), to Jones Construction Co., Mt. Vernon, O., at \$75,300. Section 3, Unity-Salem Rd. (brick), to Jones Construction Co., Mt. Vernon, O., at \$32,300. Green County, Dayton-Chillicothe Rd. (waterbound-macadam),

to Wilson Engineering & Construction Co., Xenia, O., at \$19,998. Harrison County, Dennison-Cadiz Rd. (concrete), to E. H. Cowan, Cleveland, at \$24,990. Highland County, Hillsboro-Pikeston Rd. (waterbound-macadam), to Ed. Beam, Highland, O., at \$14,814.50. The Milford-Hillsboro Rd. (waterbound-macadam), to R. H. Terrell, Highland, O., at \$6,089.79. The Allensburg-Lynchburg Rd., no bids received. Monroe County, Ohio River Rd., no bids received. Pike County, Hillsboro-Pikeston Rd. (concrete and waterbound-macadam), to E. H. Cowan, Cleveland, at \$18,879. Richland County, Mansfield-Gallien Rd. (waterbound-macadam), to E. H. Cowan, Cleveland, at \$20,182. Summit Co., Cleveland-East Liverpool Rd., no bids. Franklin Co., Columbus Washington C. H. Rd. (grading berms and ditches, surfacing certain portions), to W. V. Jewett, Worthington, at \$43,300. National (East) Rd. (grading berms and ditches, surfacing certain portions, and constructing gravel side drives), to Barrett Mfg. Co., Cleveland, at \$38,287. National (West) Rd. (same), to G. B. Upham, Johnstown, O., at \$17,985. Holmes County, Section "F," Millersburg-Canal Dover Rd. (grading berms and ditches, surfacing certain portions), to P. M. Deetz, Millersburg, O., at \$7,894. Muskingum County, Zanesville-McConnelsville Rd. (repaving with brick), to Petit & Abele, Zanesville, O., at \$3,050. Pickaway County, Section "E," Columbus-Washington C. H. Rd. (waterbound-macadam), to Brewer, Tomlinson & Brewer, Chillicothe, O., at \$15,451. James R. Marker, State Highway Commissioner.

La Rue, O.—For paving Front St. with brick, to Brewer, Tomlinson & Brewer, Chillicothe, at approximately \$26,000.

Lima, O.—For street paving following contracts have been awarded: for 11,484 sq. yds. of brick paving to Jameson & Blosser at \$1.70 per sq. yd. and 1,300 ft. excavation at 55 cts., 2,400 ft. at 50 cts., and 1,650 ft. at 47 cts. For 3,040 sq. yds. brick paving to Summers & Hardin, Lima, at \$1.73 per sq. yd., and 1,350 ft. earth excavation at 45 cts. For 3,550 sq. yds. brick paving to Summers & Hardin at \$1.75 per sq. yd., and 560 ft. excavation at 45 cts. For 6,412 sq. yds. brick paving to H. S. Enck, 539 W. Market St., Lima, at \$1.71 per sq. yd., and 3,135 ft. excavation at 30 cts. Above bids do not include cement filler, which was bid from 11 to 15 cts. C. H. Bryson is City Engr.

Mount Vernon, O.—Contracts for construction and maintenance of \$336,000 worth of road work have been awarded by Commissioner Marker. The Jones Construction Co., of Mt. Vernon secured Unity-Salem road, 4.07 miles, brick, and another part of same road, 1.71 miles, brick, in Columbiana County, first section at \$75,300, and other section at \$32,300.

Newark, O.—For paving of Maple Ave., 7th St. and Elizabeth St., to R. H. Nutter & Co.

Zanesville, O.—To A. Adams & Son, at \$9,665, for paving of Converse Ave., and to W. R. Bolin, at \$2,569, for Pierce St. paving.

Portland, Ore.—By Council contract to Oregon Hassam Paving Co., Portland, for improvement of East Lincoln St., between East 50th and East 60th with Hassam pavement for \$17,156.

Sutherlin, Ore.—For paving 1½ miles Central Ave. by city to Arenz Construction Co., at \$29,227.

Harrisburg, Pa.—Eight contracts have been awarded for State Aid highways by State Highway Commissioner Bigelow. In Columbia Co., West Berwick Boro., the McNeerney Construction Co., of Canton, Pa., received award at \$40,437.68. In Greene Co., Franklin Twp., contract was awarded to Rimonti Gagliardi, of Conneville, Pa., at \$60,167.81. In Washington Co., Union Twp., and Finleyville Boro., the contract was awarded to Bell-Bockel Co., Inc., of Altoona, Pa., at \$103,384.96. In Washington Co., New Eagle Boro., contract was awarded to Parson Construction Co., of Brownsville, Pa., at \$21,966.49. In Luzerne Co., Duryea Boro., contract was awarded to O'Brien Bros., of Avoca, Pa., at \$11,442.96. In Dauphin Co., South Hanover and Derry Twp., award was made to M. Bennett & Sons, of Indiana, Pa., at \$51,942.82. In Clearfield Co., Bigler Twp., award was made to E. H. Brua, of Hollidaysburg, Pa., at \$26,180.39. In Potter Co., Galeton Boro., award was made to Simpson, Mitchell, Crosby Co., of Punxsutawney, Pa., at \$21,437.90, on Amlesite, Bigler Twp., Clearfield

Co., 5,200 ft. of brick block pavement, to be completed by the first of next June, was bid for by the following: Geo. J. Thompson & Co., Clearfield, Pa., \$29,851.81; Hoblitzell & Price, Meyersdale, Pa., \$26,199.22; Curwensville Const. Co., Curwensville, Pa., \$28,251.98; Chas. T. Eastburn & Co., Inc., Yardley, Pa., \$30,114.96; South Shore Const. Co., Erie, Pa., \$28,162.92; E. H. Brua, Hollidaysburg, Pa., \$26,180.39. This road extends from point on road leading to Pike Run eastwardly through village of Madera to line between Cornelly-McCannley properties. West Berwick Boro., Columbia Co., bids opened were on brick block pavement extending from Briar Creek Twp. line by way of Front St. to Berwick Boro. line, distance of 8,562 ft. Bids received were as follows: Chas. T. Eastburn & Co., Inc., Yardley, Pa., \$48,901.94; Neff, Horn & Co., Slatington, Pa., \$46,315.90; D. M. Rosser, Kingston, Pa., \$44,153.32; Hassam Paving Co., Worcester, Mass., \$42,491.39; Monroe Paving Co., Langhorne, Pa., \$42,989.57; Fiss & Christiana, Watsonstown, Pa., \$51,205.45; B. G. Coon Const. Co., Luzerne, Pa., \$44,013; Wm. C. Evans, Ambler, Pa., \$47,120.90; W. H. Lyons, Sunbury, Pa., \$44,317.82; Dwyer & Co., Philadelphia, Pa., \$41,258.84; G. W. Rockwell, Sunbury, Pa., \$44,933.32; Reimard Bros., Bloomsburg, Pa., \$40,926.50; McNeerney Const. Co., Canton, Pa., \$40,437.68; Busch & Stewart, Williamsport, Pa., \$52,748.96; South Shore Const. Co., Erie, Pa., \$45,300.43; O'Brien Bros., Avoca, Pa., \$43,118.44. In Dauphin Co., South Hanover and Derry Twp., bids opened were on 3½ miles of asphaltic concrete and 7,700 ft. of brick block pavement to be constructed from Swatara Station, on the Philadelphia & Reading R. R., to West Hanover-South Hanover Twp. line, by way of road leading from Hanoverdale. This highway is to be completed by Aug. first next. Bids were as follows: McNeerney Const. Co., Canton, Pa., \$62,344.51; South Shore Const. Co., Erie, Pa., \$61,999.19; Edw. L. Bader, Philadelphia, Pa., \$61,221.68; Ambler-Davis Co., Philadelphia, Pa., \$57,842; Wm. C. Evans, Ambler, Pa., \$66,483.54; M. Bennett & Sons, Indiana, Pa., \$51,942.82; Read Construction Co., Hazleton, Pa., \$55,830.80; Geo. C. Souder, Lancaster, Pa., \$55,411.63; Chas. T. Eastburn & Co., Inc., Yardley, Pa., \$65,020.95; the Juniata Co., Philadelphia, Pa., \$59,077.76. In Washington Co., Union Twp., and Finleyville Boro., bids received were on 10,050 ft. of asphaltic concrete and 7,770 ft. of brick block paving on road running from point near property of G. Crookham, at the end of improved road at Finleyville Boro. line and through Finleyville Boro. by way of Washington, Brownsville and Sheridan Aves. to Union Twp. line, total distance of about 3½ miles. Road is to be completed a year from date. Bids opened were as follows: Duquesne Contracting Co., Pittsburgh, Pa., \$111,543.83; Bell-Bockel Co., Inc., Altoona, Pa., \$103,384.96; Chas. T. Eastburn & Co., Inc., Yardley, Pa., \$118,177.20; Reagan, Lynch & Co., Uniontown, Pa., \$107,139.99; Parson Const. Co., Brownsville, Pa., \$120,999.14; Read Const. Co., Hazleton, Pa., \$111,600.93; Foley Contracting Co., Pittsburgh, Pa., \$114,009.28; Samuel Gamble Co., Carnegie, Pa., \$106,408.36. Another brick block pavement is in New Eagle Boro., Washington Co., where more than three-quarters of a mile is to be laid from improved road in Carroll Twp. southeasterly along Sproul Route No. 247. This is to be completed by first of next July. Following bids were received: Hoblitzell & Price, Meyersdale, Pa., \$22,222.50; Thomas Sweetney & Co., Pittsburgh, Pa., \$26,434.33; John W. Hallam, Washington, Pa., \$23,880.30; Duquesne Contracting Co., Pittsburgh, Pa., \$25,577.55; F. F. Schellenberg & Co., Pittsburgh, Pa., \$27,964.90; P. F. Rhoads & Sons, Claysville, Pa., \$25,790.62; Parson Construction Co., Brownsville, Pa., \$21,966.49; Ridge Bros. & Co., Pittsburgh, Pa., \$25,528.60; John L. Elder, Ebensburg, Pa., \$23,394.77; Chas. T. Eastburn & Co., Inc., Yardley, Pa., \$22,690.77. Alternate bids received on Galeton Boro., Potter Co., were for more than mile of improved highway, extending from Main and West Sts. over West St. to Union St.; thence over Union St. to Germania St.; thence on Germania and 5th Sts., and thence over 5th to west branch township line. Road is to be completed by July first next. Bids received were as follows: (1) asp. bit. mac., (2) Amlesite, (3) Warrenite, (4) brick block, (5) one course concr., (6) Filbertine, (7) Unionite: McNeerney Const. Co., Canton, Pa., (1) \$20,903, (3) \$30,877.05, (4) \$33,271.45, (5) \$23,496.50, Horn & Devling, Galeston, Pa., (1) \$21,-

\$71.90, (4) \$36,429.70, (5) \$27,122.20; Wm. C. Evans, Ambler, Pa., (1) \$29,013.60, (2) \$31,706.06, (3) \$34,499.85, (4) \$35,279.10, (5) \$32,205.60; Simpson, Mitchell, Crosby Co., Punxsutawney, Pa., (1) \$21,338.15, (2) \$21,437.90, (3) \$24,939.15, (4) \$31,180.21, (5) \$22,236.90, (6) \$25,826.90, (7) \$23,632.40. In Green Co., Franklin Twp., bids received were on road extending nearly two miles along Smith Creek of brick block. Following bids were received: Bell-Bockel Co., Inc., Altoona, Pa., \$61,783.92; John W. Hallam, Washington, Pa., \$61,024.09; Frederick Robinson, Waynesburg, Pa., \$62,646.35; Rimonti Gialardi, Connellsville, Pa., \$60,167.81; W. F. Blair & Sons, Waynesburg, Pa., \$60,999.48; John L. Elder, Edensburg, Pa., \$62,674.55; Chas. T. Eastburn Co., Inc., Yardley, Pa., \$70,641.30. One-fourth mile of brick block pavement in Duryea Boro., Luzerne Co., from the Avoca Boro. line along Main St. to Lackawanna Co. line, is to be completed by the first of December. Following bids were received: O'Brien Bros., Avoca, Pa., \$11,442.96; Moores & Mallin, Norristown, Pa., \$11,433.08; B. C. Coon Const. Co., Luzerne, Pa., \$11,866.92.

Harrisburg, Pa.—O'Brien Bros., contractors, of Avoca, have been awarded contract for construction of road through Duryea Borough, which is to be built with state aid.

Pittsburgh, Pa.—For concrete sidewalks and foundations for roadway pavements on Bloomfield bridge and approaches, to M. O'Herron Co., 1st and McKean Sts., at \$19,879.

Ridgway, Pa.—To B. H. Coryell, contract including about 10,000 sq. yds. of paving at about \$28,000.

Verona, Pa.—For construction of 9,320 sq. yds. brick paving with concrete foundation to J. L. Dick, at \$1.93 per sq. yd.; total, \$27,020; excavation, 54 cents. For letting new curbing, 5,220 lin. ft., at 79 cents per lin. ft., to same contractor. For 25,000 sq. ft. cement sidewalks to John Clark, at 12½ cents per sq. ft. Douglas & McKnight, Engrs., Pittsburgh, Pa.

Rock Hill, S. C.—By Town Council, for standard cement paving on Booth St., about 300 ft., to Fort Mill Lumber Co.

Beaumont, Tex.—For constructing road connecting Mansfield Ferry with shell road, to Jesse W. Stuart, at \$11,500.

Texarkana, Tex.—For paving of Maple and State Sts., to Burton Hahn Const. Co., of Dallas, Tex. Paving will be rock asphalt.

Moundsville, W. Va.—To Berry & Hammond, at \$0.37½ per cu. yd., for grading and widening Reilly Hill road.

Milwaukee, Wis.—Widening of Cedar St. will be voted on Oct. 7.

Sheboygan, Wis.—By Board of Public Works, to Birdsall-Griffith Co., of Racine, contract for concrete pavement on Indiana Ave. from S. 13th to S. 17th Sts., at \$1.40 per sq. yd., and to Pestien & Naumann contract for concrete pavement on Ontario Ave. from N. 9th to N. Water St., at \$1.38 per sq. yd.

Chatham, Ont.—For constructing 600 yds. of tarvia pavement, to Carritte Paterson Co., St. John, N. B.

SEWERAGE

Birmingham, Ala.—Ordinance has been passed providing for construction of sanitary sewers in East Lake, amounting to \$527.40.

Douglas, Ariz.—City will shortly construct a new storm ditch on Dolores Ave.

Chino, Cal.—Engineers Olmstead & Gillen, Hollingsworth Building, Los Angeles, have been selected as engineers to prepare plans and specifications for municipal sewer system to be installed here. As soon as preliminary plans and estimates are completed, bond election will be called by Board of Trustees to vote funds for construction of system.

Etna, Cal.—City is planning to construct about 17,000 ft. of 6-in. and 8-in. pipe sewers, small Imhoff tank of two units, 10-ft. diameter inside, to cost \$21,000. N. D. Baker, 310 Sansome St., San Francisco, is city engineer.

Upland, Cal.—Citizens have petitioned City Council to commence proceedings to have municipal sewer system installed here. Portion of sum necessary to employ Engineer James A. Sourwine, of San Bernardino, to prepare plans and specifications, has already been raised by subscription.

Bridgeport, Conn.—Clerk of Board has been instructed to advertise for bids for construction of sewer in Wade St.

Naugatuck, Conn.—It has been voted that superintendent of streets, under direction of borough engineer, be in-

structed to lay 15-in. storm sewer on Church St. from Park Pl. to 20-in. storm sewer.

Naugatuck, Conn.—Engineer Ham has been instructed to prepare plans for storm sewer on Scott St. from Lewis to Cherry St.

Washington, D. C.—Tenders are invited by municipality of Alexandria, Egypt, until December 8, 1914, for construction of drainage system for that city. Work will comprise: (1) The construction of a general system of sewers; (2) the erection of a pumping station at Kaid Bey, and (3) the construction of a main outfall into the sea. Tenders may be made for whole or part of work. Copies of the cahier de charges may be obtained free on application to Bureau Technique de la Municipalite d'Alexandrie, where plans may be obtained on deposit of 40 piasters (\$2) per sheet. No. 13,643 Bureau of Manufactures.

Rome, Ga.—Residents of East 3d St., near 8th Ave., have petitioned for sewer. Superintendent of Public Works has been instructed to make survey and report on cost.

Indianapolis, Ind.—Resolutions have been confirmed for sewers in 18th St., from Tacoma Ave. to 30 ft. west of Rural St.; Highland Drive, from 82 ft. west of Park Ave. to 125 ft. east of Broadway; Udell St., from Northwestern Ave. to Annette St.; alley, east of College Ave., from 30th St. to 25 ft. south of 32d St., and Brookway, from Tacoma Ave. to point 570 ft. east.

South Bend, Ind.—Resolution has been adopted for sewer along Cherry St. from Washington Ave. to first alley south of Jefferson Blvd.

South Bend, Ind.—Resolution has been adopted for construction of various sewers. V. C. Sweeney is Acting Clerk.

Dubuque, Ia.—City will construct 8-in. tile pipe sanitary sewer in Hech St. Work consists of about 234 lin. ft. 8-in. tile pipe and 2 manholes. Also in Arlington St., work consisting of 650 lin. ft. 8-in. tile pipe and 4 manholes. J. J. Shea is City Recorder.

Postville, Ia.—Council has been petitioned to call special election to vote on installation of sewerage system.

Paducah, Ky.—City will immediately call for bids on proposed sewer system, to cost about \$449,000. L. A. Washington is City Engineer.

Chicopee, Mass.—Bonds have been sold for construction of sewers.

New Bedford, Mass.—Board of Aldermen has voted for extension of Tripp's Brook relief sewer in Chancery and Union Sts., to cost about \$25,000.

Pittsfield, Mass.—Sum of \$35,000 for sewers has been recommended.

Carthage, Mo.—City Council has adopted ordinance providing for sewer in east part of town. Proposed sewer will drain all portions of town east of present sewer districts as far east as River St. and Prospect Ave. This sewer will have two arms at its upper end, one arm running south from corner of Water and Orchard Sts. to Centennial Ave. Other arm will start from same point and run southwest to Macon St. This sewer crosses Central Ave. near Frisco crossing of that street and then will run northwest to Maple St. and from there north to the river. Cost of this sewer is estimated to be \$18,539.57, which would be 92c. for each 1,000 sq. ft. of land inside of district.

St. Joseph, Mo.—Ordinances have been adopted for construction of various sewers. J. E. Gates is City Clerk.

New Brunswick, N. J.—Ordinance providing for issuance of \$12,500 worth of bonds to meet this city's share of expense of new sewer system at Milltown has been adopted on first and second readings.

Passaic, N. J.—Ordinance has been passed for construction of storm water sewer across Dunder Island to easterly side thereof. Z. A. Van Houten is City Clerk.

Port Reading, N. J.—Ordinance is being considered for laying of sewers in First, Third and Tappan Sts.

Binghamton, N. Y.—City Engineer John A. Giles has received from State Department of Health permission to construct sewer along bank of Chenango River on Wall St.

Binghamton, N. Y.—Ordinance has been adopted ordering construction of sewers on Glenwood Ave. and Field St.; also sewer on Orton Ave.

Lockport, N. Y.—Bids will shortly be asked for construction of Chapel St. drain.

New York City, N. Y.—After series of six months of experiment at Elmhurst Sewage Disposal Plant under direction of President Connolly, of Queens, to test efficiency of proposed electric system of

sewage disposal for City of New York, the Queens President has made public plans for system which he says is revolution of method of sewage disposal and would enable this city to dispose of all its sewage, thus purifying East and Harlem Rivers and Jamaica Bay. Plant at Elmhurst, which takes care of 25,000 gallons per day, consists of one of Landreth electrolytic process and machines 2 ft. by 4 ft. by 8 ft., containing 5 banks of electrodes 10 ins. by 18 ins. ¾ of an inch apart, with 11 plates to each bank. It is estimated that cost of system for entire city would be \$3,000,000.

Schenectady, N. Y.—Only one bid was made on pumping machinery for pumping station at sewage disposal plant. This was by S. B. Whinery, of New York city, who bid \$3,900 each on two centrifugal pumps of 7,000 gallons a minute capacity, and \$2,960 on one centrifugal pump of 3,500 gallons capacity, a total of \$10,760.

Utica, N. Y.—City Engineer Kemper recommends construction of storm water sewers in City St., from Gray Ave. to Knox St.; in Walnut St. from City St. to West Ave., and in West Ave. from Walnut St. to Knox St.

Cincinnati, O.—Resolutions for construction of various sewers are being considered.

Salem, O.—Construction of storm water sewers in several streets of city is contemplated.

Springfield, O.—Construction of big trunk line sewer through center of city is planned.

Youngstown, O.—Sewer bonds will be sold by J. Richards, Village Clerk, in sum of \$3,132.25, until noon, Sept. 16.

Eugene, Ore.—See "Streets and Roads."

Erie, Pa.—Ordinance has been adopted providing for construction of 15-in. diameter lateral sanitary sewer in 14th St., extending from Plum St. to Poplar St., and in Poplar St. from 14th to 15th St., and in 15th St. from Poplar to Cherry St., together with necessary house connections. M. J. Henry is Clerk, City Council.

Hazleton, Pa.—Council is considering installation of sewage disposal plant of same type as those installed at Lebanon and Danville.

Lebanon, Pa.—Question of bond issue for constructing storm sewer system will be voted on.

Sioux Falls, S. D.—City Auditor will advertise for bids for construction of sewer connections on Summit Ave. from 1st St. to Omaha railway.

Dallas, Tex.—Construction of at least two units of proposed municipal sewage disposal plant at outlay of about \$150,000 is planned.

Dallas, Tex.—Plans have been drawn for James H. Fuertes, engineering expert, for proposed municipal sewage disposal plant.

Galveston, Tex.—Steps have been taken for installing a better system of drainage in western section of city.

Gatesville, Tex.—City is planning to install sewage system in near future. Commercial Club, in connection with City Council, is working on plans for election to issue bonds for necessary amount to build system, estimated cost of which is \$25,000. As soon as preliminary engineering work is arranged, the matter will be submitted to the people.

Laredo, Tex.—Bonds in sum of \$24,000 have been voted for storm sewers.

Cathlamet, Wash.—Preliminary plans have been submitted for construction of complete system of sewers for city. City Engineer has been instructed to complete survey and submit complete plans and specifications at next meeting of Council, Sept. 7.

Spokane, Wash.—Plans are being prepared by City Engineer Morton Macartney for proposed new route for outlet of downtown intercepting sewer; estimated cost, \$20,000.

Beloit, Wis.—Bids will be received by Board of Public Works until 2 p. m., Sept. 18, for construction of sewers in Districts B and C. Work consists of about 7,323 lin. ft. 8-in. sewer, 15 manholes and 10 flush tanks.

CONTRACTS AWARDED.

Bridgeport, Conn.—Sewer contracts have been awarded as follows: Sewers in North Ave. and North Washington Ave. to the B. D. Pierce, Jr. Co., Bridgeport; in Arctic and Willow St. to Burns Co., and in Cleveland Ave. and Eagle St. to the Pierce Manufacturing Co., Bridgeport.

Hartford, Conn.—By Contract Board, contracts for three sections of Maple Ave. sewer: For section D, to A. Lambo, New Haven, for \$19,444.79; contracts for section E and section F to W. T. Ryan Const. Co., of this city, figures on first section being \$20,297 and on second section, \$19,069.30.

Waterbury, Conn.—To Barbara & D'Aurio, Waterbury, two contracts for sewer and storm water. There were only two bids received, lucky concern bidding \$1,512.50 against L. C. Archambault's \$1,538.90 on sewer contract, while on storm water contract Archambault's bid of \$1,888 was higher than Barbarn & D'Aurio's \$1,562.20.

Chariton, Ia.—To Turner Impt. Co., Des Moines, at \$120,155, for construction of about 18 miles of sewer and 3 septic tanks.

Newport, Ky.—By City Commissioners, contract for reconstruction of sewer outlet at foot of Monmouth St., to J. B. McLane & Co. at their bid of \$5,500.

Boston, Mass.—To W. H. Ellis & Son Co., 37 Conder St., East Boston, at \$34,790, for laying of 1,400 ft. 60-in. cast-iron outfall sewer on pile foundation in harbor.

Warren, Minn.—For extension to present sewer, constructing Imhoff tank, filter beds, etc., to Robinson & Vanalstein, Grand Forks, N. D., at \$9,906. G. O. Cross is City Recorder.

Anaconda, Mont.—To R. M. Bardsen & Co., of Butte, Mont., for construction of new sanitary outlet on flat, to cost about \$40,000.

Benson, Neb.—For constructing main sewer and disposal plant from plans by P. A. Edquist, Omaha, to Arthur A. Dobson Co., Lincoln, at following bid: 2,549 lin. ft. 8-in. pipe sewer, 47 cts.; 10,383 ft. 10-in., 48 cts.; 9,258 ft. 12-in., 52½ cts.; 2,564 ft. 15-in., 57 cts.; 1,593 ft. 18-in., 87 cts.; manholes, vertical, per ft., \$3.16; cast iron, per lb., 2.5 cts.; North West disposal plant (lump sum), \$6,456; South West, \$6,427; North East, \$1,812; North, \$1,897; South East, \$2,293; total, \$36,661. Next 3 lowest bids: H. J. Cathrie Constr. Co., Omaha, \$41,051; Wm. Fitch Co., Omaha, \$41,651; Katz Constr. Co., Omaha, \$42,992.

Bayonne, N. J.—By Council to Contractor Martin Murray for construction of three sewers at total bid of \$1,878.60.

Flushing, L. I., N. Y.—To Harry Britton, of Richmond Hill, contract to construct temporary wooden box sewer through Leavitt Ave. Park. His bid was \$3,514.96. Sewer will be 4 ft. square, built of pine board, and about 800 ft. long.

Gates, N. Y.—For constructing vitrified pipe sewers in Emerson and McNaughton Sts., to Michael Francisco, 466 Oak St., Rochester, at \$5,888.

Newburgh, N. Y.—For construction of sewer in Robinson Ave., to extend 860 ft. north from Pine St., to James L. Kehoe, at \$2,200.

Akron, O.—To E. McShaffrey & Son, Akron, at \$412,414, for construction of sewage disposal plant. R. Winthrop Pratt, Hippodrome Bldg., Cleveland, is Engr.

Newark, O.—For constructing Park Ave. sewer, to A. R. Pitser, and to Henderson Bros., of Coshocton, for construction of sewers in Webb St., Ballard Ave., Penny Ave., Arch & Lawrence Sts.

Urbana, O.—By Commissioners, contract for Graham Ditch, in Wayne township, for labor, to W. T. Walls, of Urbana, at his bid of \$1,125. The Richmond Clay Co. are to furnish material at its bid of \$1,335.

Portland, Ore.—By Council to Azar Construction Co. contract for construction of Long Ave. branch of Holgate district sewer for \$16,362.

Philadelphia, Pa.—Low bidders on main sewer extensions, to cost about \$200,000, have been awarded contracts. R. P. Bennis, Chew and Price Sts., at \$31,730, gets job for Algard, Tyson and Walker Sts.; Robert Higgins, 4642 Lancaster St., \$30,797.05, for Cobb's Creek extension from Sansom St. to 300 ft. north of Market St.; estate of David McMahon, Main and Cheltenham Sts., \$15,724, for Kemble Ave., through Nedro St.; Robert Higgins, for Rock Run extension on Ashdale, from the Reading tracks to near Front St., \$47,762.98; Peter Ellis, 3342 N. 11th St., Rock Run extension in 7th St., from Olney Ave. to creek near Chew St., \$24,140.34, and for Tabor St. extension, from 6th to Fair-

hill, \$3,721; Edward L. Bader, Westmoreland St., east of Casper to bulkhead of Delaware Ave., \$13,712.70, and People's Bros., 25th and Callowhill Sts., Wingohocking sewer in Annsbury St., from 5th St. east, \$16,660.

Providence, R. I.—Contract for engine and rope drive for new 50,000,000-gallon centrifugal sewage pump to be installed at Ernest St. sewage pumping station has been awarded by Board of Contract and Supply to William A. Harris Steam Engine Co., of this city, on bid of \$9,470.50. Contract for pump itself has been given to Providence Engineering Works on figure of \$3,985.

Winooski, Vt.—To J. E. Cashman, of Burlington, contract for the construction of sewers on Heights and East Canal Sts.

Wheeling, W. Va.—By Board of Control, contract for sewerage of Virginia St., to Newton Talbot. Contract calls for completion of nearly 700 ft. of sewerage.

Kaukauna, Wis.—To Chas. Ristau, city, at \$0.65 per ft., for Grignon St. sewer, and to Geo. Kispert, at \$0.80, for Division St. and at \$1.10 for Third St. sewers.

Sheridan, Wyo.—To A. C. Evans, city, at \$39,377, for construction of 8 miles of 8-in. and 10-in. sewer extension.

WATER SUPPLY

Escondido, Cal.—Bonds in amount of \$100,000 have been sold for installation of water system.

Pasadena, Cal.—Contract whereby city agrees to purchase from George Woodbury and Union Trust & Savings Bank the Woodbury water system for \$35,000 has been approved by City Commission.

San Francisco, Cal.—Board of Works has decided to call for bids for construction of well on city's lot on 44th Ave., between Fulton and Cabrillo Sts. City Engineer has reported that his designs for 3,000,000-gal. reservoir, which is to be constructed in Lincoln Park, are practically complete.

La Salle, Ill.—Bond issue of \$15,000 has been authorized for construction of new city well.

Quincy, Ill.—Plans are ready for laying of steel intake pipe in river by the Citizens' Water Works Co.

Ft. Scott, Kan.—Question of mechanical filtration plant at city water works is being discussed, to cost about \$40,000.

Kansas City, Kans.—Citizens have voted \$200,000 in bonds for extension of water system to domestic consumers.

Mineral, Kan.—Ordinance is being considered for voting \$4,500 bond issue for city water plant.

Baltimore, Md.—Work on Loch Raven reservoir will be pushed.

Peabody, Mass.—Appropriation of \$200,000 has been made for installation of water meters.

Pittsfield, Mass.—Sum of \$5,000 for water pipes has been recommended.

Westfield, Mass.—Plans are being considered for proposed additional reservoir.

Mesaba, Minn.—Village at special election has voted \$14,000, of which sum \$4,700 will be used in building village hall and \$9,300 for installing water works.

Orion, Mich.—Engineers Smith & Bonlay, Toledo, O., are preparing plans for water works system to cost \$34,000.

Albion, N. Y.—Board of Village Trustees has passed resolution authorizing readvertising of village bond issue in accordance with notice heretofore printed. Bonds are to provide funds for purpose of buying system of water works and constructing extensions and improvements thereto. Bonds will be dated Aug. 10, 1914, and will be 165 in number of denomination of \$1,000 each.

Dayton, O.—National Board of Underwriters have recommended that a 15,000,000-gallon low-service pump, designed to operate against a head of 110 lbs., be provided and present pumps be put in perfect condition; also that suction reservoir of at least 10,000,000 gals. capacity be constructed near pumping station; that distribution system be strengthened by early installation of complete system of main arteries and secondary feeders, designed with view of eventually being reinforced by mains from an elevated reservoir, and to furnish fire supply at pressure of at least 75 lbs. in high value districts and 60 lbs. in residential sections.

Ironton, O.—State Board of Health has approved plans for proposed waterworks system. J. F. Witmer Co., Buffalo, N. Y., is Engr.

Sandusky, O.—Sale of bonds in sum of \$70,000 is being discussed for laying of intake pipe for water works department and for construction of new central fire station.

Philadelphia, Pa.—The need for an independent water supply pipe line for South Philadelphia, and a sedimentation basin for Torresdale plant are likely to be urged. Pipe line may cost upwards of \$1,000,000 and basin \$500,000.

Summit, S. D.—Movement has been inaugurated to have Town Council submit to voters at special election proposition of issuing bonds in sum of \$8,000 for construction of municipal system of water works.

Austin, Tex.—The Attorney General's Department has approved \$16,000 bond issue of city of Killeen, water works series No. 1, forty-tens, 5 per cent.

El Paso, Tex.—Council has rejected all bids for installing new pumps, boilers, air compressors and other machinery for municipal water plant. New bids will be received.

Fort Worth, Tex.—Plans for establishment of waterworks system will be completed by citizens of Niles City.

Livingston, Tex.—In election citizens of Livingston have authorized issuance of \$25,000 in bonds for construction of water works system. Plans for system are being prepared.

Niagara Falls, Ont.—Stamford Council will make arrangements to raise funds for water works system by selling debentures to residents of township. Bonds will bear interest at 5 per cent., and will be guaranteed by municipality. About \$10,000 is required to carry out the water works plan.

CONTRACTS AWARDED.

Knoxville, Ga.—To Commercial Construction Co., of Kansas City, for installation of water works system, at \$30,300.

Aurora, Ill.—For drilling a well, to S. E. Griger, 330 Old Colony Building, Chicago, at \$18,500.

South Bend, Ind.—For water connections on Sherman Ave., to W. H. Burke, South Bend, Ind.

Afton, Ia.—For installation of water works system, to Des Moines Bridge & Iron Works, Des Moines, Ia., at \$17,580.

Lowell, Mass.—By Purchasing Agent Foye a \$11,000 contract for pipes and castings for water department. The contract calls for 238 tons of straight pipe and 86 tons of special castings, and was awarded to Standard Cast Iron Pipe & Foundry Co., of Bristol, Pa., whose bids were as follows: Straight pipes, \$21.95 per ton; castings, \$69.90 per ton.

Webster, Mass.—To Newell & Dresser, Franklin, N. H., for constructing reinforced concrete reservoir; also for laying water mains. Work consists of about 8,000 ft. 20-in. c.-i. pipe and about 500 ft. 10, 8 and 6-in.; and a reinforced concrete distributing reservoir, 1,600,000 gal. capacity; total cost about \$28,000. Engineer is F. F. Fuller, 12 Pearl St., Boston.

Keewatin, Minn.—For constructing reinforced concrete lining and cofferdam for well, to John Ausehno & Co., Keewatin, at \$8,352.

Marshall, Minn.—To Hector Coolsaet of this city, at \$0.29 per ft., for laying water mains.

Mountain Iron, Minn.—To Boylan & Co., Virginia, Minn., for installation of water mains in southwest portion.

Cut Bank, Mont.—To C. H. Green & Co., Spokane, Wash., contract for installing water works system, at \$29,000.

Hastings, Neb.—By City Council, contract to Rutherford Bros., of this city, for constructing water district. Work consists of 1,300 ft. of 4-in. main, one hydrant, two Michigan water gates for \$10.80. W. H. Fuller, Asst. City Engr.

Youngstown, O.—To Kerr Turbine Co., Wellsville, N. Y., for installing at new city pumping station 3 direct driven engines and pumps at \$39,975.

Eugene, Ore.—Barney & Johnson, of Portland, who were successful bidders for construction of the 2,500,000-gal. reservoir to be built on College Hill by

Water Board, have been compelled to throw up contract. It will now be necessary to advertise for bids again.

Pittsburgh, Pa.—By Director Robert Swan, of Department of Public Works, following contracts for waterworks improvements: M. O'Herron Co., city, \$50,822, river extension work; Jas. H. McQuade, Jr., city, \$17,105, Squirrel Hill section; Frank & Felix Dinius, city, \$22,864, Woods Run section.

Canora, Sask.—For constructing water system, contracts have been awarded as follows: Laying water mains, to Flanagan & Murphy, at \$10,011; pump house at springs, to Flanagan & Murphy, at \$5,345; steel water tower, to Dominion Bridge Co., Montreal, Que., Can., at \$5,744; furnishing c.-l. water pipe and specials, to Canadian Iron Corporation, at \$17,887, and for constructing well, to Flanagan & Murphy, at \$4,310.

LIGHTING AND POWER

Argenta, Ark.—Bonds have been authorized for installation of ornamental street lighting system on East Washington St.

Los Angeles, Cal.—Ordinance has been passed providing for installation of ornamental lamps on Grand Avenue between 6th and Main Sts., and on Figueroa St. between 6th and 10th Sts.

Washington, D. C.—An American consular officer in United Kingdom reports that firm is in the market to purchase large quantities of thin glass bulbs for use in manufacturing electric incandescent lamps. Illustration of shapes desired accompanied report. It is not essential, however, that they be precisely same as illustrations. Samples and prices of bulbs should be forwarded to firm named in report. No. 13,652, Bureau of Manufactures.

Lewiston, Ida.—James Morris, consulting engineer, Portland, Ore., will prepare preliminary plans and estimates for construction of municipal power plant on Clearwater River.

Springfield, Ill.—Installation of additional arc lights in outside districts is being planned.

Indianapolis, Ind.—City, within next twenty-four hours, will engage electrical engineer who can qualify as expert before Indiana public service commission and in courts, and will then require of Indianapolis Light and Heat Company access for him to Kentucky avenue electric light and power generating plant. He is to make inspection of that part of equipment used in providing public lighting service.

South Bend, Ind.—Board of Works has planned for meeting with F. A. Bryan, general manager of Indiana & Michigan Electric Co., to consider lighting of shaded and boulevard streets with electricity. Mr. Bryan will submit plans on new system which it is claimed works successfully.

Duluth, Minn.—A sub-station which would supply all of West Duluth with current could be installed for about \$90,000, according to figures which have been prepared for Commissioner Leonidas Merritt, head of division of public utilities.

Hibbing, Minn.—Question of municipal lighting plant is being discussed.

Palmyra, Mo.—Contract for enlargement of Palmyra electric light plant, which will include installation of sufficient machinery to generate day current, will be awarded soon. Specifications and blue prints have been completed by F. D. Martin, of Kansas City, Public Service Engineer.

Valentine, Neb.—Bonds in sum of \$5,000 have been voted for improvements to water and light plant.

Uehling, Neb.—Bids are being received for construction of electric light plant to cost about \$7,700, including building and direct current, oil-engine driven plant with storage battery.

Passaic, N. J.—City Clerk has been authorized to advertise for bids for lighting of city.

Patterson, N. J.—Better street lighting system is being discussed. Members of chamber of commerce are in favor of ornamental poles.

Bath, N. Y.—Bids will be received by Trustees of village until 7 p. m., Sept. 15 for purchase of \$50,000 bonds for purpose of establishing system for supplying village with electric lights. John W. Taggart is Village Clerk.

Hamilton, O.—Lighting of High and Main St. bridges is being discussed.

DeGraff, O.—Plans are being prepared for erection of new municipal power plant. J. T. Scott is Supt.

Frankford, Pa.—Plans are being made for installation of great "white way" through business section.

Walterboro, S. C.—Election will be held October 8 for voting on \$15,000 bond issue for installation of electric light system.

Cathlamet, Wash.—Steps are being taken for installation of municipal electric light plant.

CONTRACTS AWARDED.

Punta Gorda, Fla.—For installation of municipal electric light plant, to P. E. Fansler, of St. Petersburg. Plant will maintain about 1,500 lamps.

Holyoke, Mass.—Contracts for electric light fixtures in vocational school and central fire station have been awarded by Board of Public Works. The Edward Miller Co. will furnish fixtures for vocational school for \$873, providing they are given through local dealer, and R. T. Oakes Co. received fire station contract for \$717.88.

Virginia, Minn.—By Water and Light Commission, for construction of municipal high-pressure gas plant, to American Gas Construction Co., Newton, Ia., at \$58,000.

Philadelphia, Pa.—To Horn & Brannen, 427 N. Broad St., for light fixtures for Home for the Indigent, to cost \$1,792.42.

Cheyenne, Wyo.—To Capital Electric Co., city, for furnishing of cable, wiring and ornamental lamp posts and installation of same on Capitol Ave.

FIRE EQUIPMENT

Los Angeles, Cal.—Chief Eley of fire department has been authorized to purchase two motor driven tractors. Appropriation stands approved on current budget.

Alton, Ill.—Resolution has been adopted that Fire Department committee be authorized to purchase 1,500 ft. of new fire hose. B. R. Kennedy is City Clerk.

Beverly, Mass.—Eight bids for furnishing of combination motor kit to take place of chemical at Central station have been submitted to city council public service committee. Lowest bids were submitted by Peerless company of Boston. For four cylinder car they offered a 50-horse power machine, quoting \$3,750, for one-tank car and \$3,975 for two-tank car. On six cylinder machine, 60-horse power, bid was \$3,850 for one-tank car and \$4,075 for two-tank car. For shaft driven car price would be \$250 less. The Maxim Motor company of Middleboro offered a 45-horse power four-cylinder car, fitted with one tank at \$3,975 and with two tanks at \$4,485, for the six-cylinder car, 80-horse power, the bid was \$5,000 for a one-tank and \$5,475 for a two-tank car. The Knox company of Springfield bid on four-cylinder, 48-horse power car at \$5,190 for one-tank and \$5,490 for two-tank. The Seagraves company of Columbus, O., bid on six-cylinder 79 3-10 horse power machine, \$5,475 for one tank and \$5,775 for two tanks. O. K. Kress and Son, Lawrence, using a White chassis and engine, bid on six-cylinder car, 64-horse power at \$5,775 for one-tank and \$5,945 for two-tank car. This was with a self-starter and with this off the price was \$300 less. The La France company of Elmira, N. Y., bid on a four-cylinder, 72-horse power machine at \$5,500 for a one-tank car and \$5,800 for a two-tank car. For six-cylinder, 55-horse power, assembled machine the bid was \$4,500 for a one-tank and \$4,800 for two-tank car. The Robinson manufacturing company of St. Louis bid on four-cylinder, 80-horse power machine at \$5,500 for a one-tank and \$5,744 for a two-tank car. For six-cylinder, 60-horse power machine company bid \$5,000 for one-tank and \$5,244 for two-tank car. James B. Boyd & Brother, Philadelphia, bid on 75-horse power four-cylinder car, at \$5,500 for one-tank and \$5,750 for two-tank car. For a 110-six-cylinder car, the Boyd company bid \$6,250 for one-tank and \$6,500 for two-tank car. All of bids were built to order machines with exception of the La France, six-cylinder car, which was an assembled machine. Committee has taken bids under advisement.

Bayonne, N. J.—Purchase of tractors is being considered for steamers and trucks. John J. Boyle is Chairman Fire Committee.

Camden, N. J.—Finance committee of City Council of city of Camden, N. J., will receive sealed proposals at 8 p. m., Sept. 14, 1914, for purchase of \$70,000 fire bonds. G. A. Frey is City Treasurer.

Newburgh, N. Y.—Ringgold Hose Co. No. 1 will petition City Council for new motor for its fire apparatus.

Rochester, N. Y.—Clerk Frank X. Pifer has been instructed to advertise for bids on two-ton chassis for Fire Department.

Rockville Centre, L. I., N. Y.—Purchase of automobile fire apparatus is being discussed.

Tarrytown, N. Y.—New fire whistle is to be installed.

Dayton, O.—The National Board of Underwriters have recommended installation of new fire alarm system, and purchase of following apparatus: (a) For proposed auxiliary squad: An automobile with motor of at least 48-horse power, and carrying a 40-gallon chemical tank, 500 feet of 2½-inch hose, portable extinguishers and salvage appliances, including at least 3 waterproof covers. (b) For proposed Engine and Ladder company 9: An automobile combination pump and hose wagon and an automobile 50-foot service truck. (c) For Ladder Companies 2 and 3: Automobile quick-raising aerial trucks. (d) For Ladder Company 4: An automobile service truck. (e) For Engines 3 and 4 and Truck 1: Motor tractors. (f) Place the reserve Nott engine in service at Station 12. (g) For the chief and marshals: Automobile runabouts. (h) For hydrant work: A motor truck. (i) Place plain hose wagons in reserve at Stations 2 and 3, fitted with turret pipes and loaded with 1,000 feet of 3-inch hose.

Sandusky, O.—Sale of bonds in sum of \$70,000 is being discussed for construction of new central fire station and laying of intake pipe for waterworks department.

Springfield, O.—Complete motorization of city fire department is planned.

Providence, R. I.—Erection of fireproof building for exclusive use of fire alarm signal system is being considered.

Charleston, S. C.—May purchase motor triple combination wagon in a few months. Louis Behrens is Chief.

Cleburne, Tex.—City will purchase motor triple combination wagon in a few months. H. J. Dickey is Chief.

Newport News, Va.—Motorizing of fire department is being planned.

Puyallup, Wash.—City Council has decided to submit bond issue of \$10,000 in December for purchase of adequate fire department equipment.

CONTRACTS AWARDED.

Hartford, Conn.—Board has voted to purchase from American-La France Fire Engine Co., of Elmira, N. Y., a third-class metropolitan engine. Cost of new apparatus will be \$2,750.

Hartford, Conn.—To American & British Mfg. Co., of Providence, for furnishing new 2-wheeled tractor of gas-electric type.

Watertown, Conn.—For furnishing automobile chemical, contract has been awarded to Knox Motor Co., of Springfield at \$2,500.

Wilber, Neb.—To Eureka Fire Hose Mfg. Co., New York City, contract for 1,000 ft. of Paragon hose.

Syracuse, N. Y.—For furnishing 2,000 ft. of hose to the United Globe Rubber Mfg. Co., Trenton, N. J.

East Washington, Pa.—To American-LaFrance Fire Engine Co., for a 70 h. p. motor combination chemical and hose wagon.

BRIDGES

Westport, Conn.—Plans for erection of new State St. bridge over Saugatuck river in center of town are being made.

Jacksonville, Fla.—A. F. Harley Consulting Engineer, has been retained by Board of Commissioners of Duval County to prepare plans and estimates for construction of bridge over St. Johns River. John H. Patterson is chairman of the Board of Commissioners.

Libertyville, Ill.—Contracts will shortly be awarded for putting in of \$10,000 worth of improvements. Largest contract will be construction of bridge over Des Plaines river. Bids for same will be received on Sept. 5.

Johnson, Kan.—County Clerk has received from the State Engineer's office the blue prints for Cockrum crossing and also specifications for steel bridge and low water bridge at Bearman crossing.

Syracuse, Kans.—County will vote at November election on bond issue for construction of bridge over East Bridge Creek.

Trenton, N. J.—Committee has approved plans for the Mt. Rose-Stony Brook and Titusville bridges, for which bids have been advertised for.

Brooklyn, N. Y.—Reconstruction of Queensboro bridge is being discussed; estimated cost \$3,024,000.

Moscow, N. Y.—Special election will be held for voting on \$3,000 bond issue for constructing, repairing and maintaining bridges in town.

Cleveland, O.—Question of erecting a third high-level bridge over Cuyahoga River will be submitted to voters of Cuyahoga County in November. Estimated cost of bridge is \$3,700,000.

Massillon, O.—County Commissioners will complete Wooster St. bridge over Tuscarawas River at Navarre, work on which was abandoned by McWhick Construction Co. of Niagara Falls.

Dallas, Tex.—War Department at Washington has approved plans for Dallas County's new drawbridge across Trinity River on Packing House-Trinity Heights Rd.

Houston, Tex.—Harris County Commissioners have been petitioned to construct bridge over Clear Creek at Seabrook.

Lynchburg, Va.—The contract recently approved by City Council providing for \$800,000 overhead concrete viaduct over three railways and the James River here, has been signed on behalf of city and paper has now been sent to President L. E. Johnson, of the Norfolk & Western. The Southern and Chesapeake & Ohio presidents will also sign the paper at once. Bridge is to be built by railroads to obviate three bad grade crossings, city contributing \$50,000 and both approaches.

Milwaukee, Wis.—Tentative plans for two-leaf bridge at State St. have been forwarded to Washington for approval.

CONTRACTS AWARDED.

Esparto, Cal.—To Ross Construction Company of Sacramento contract for construction of bridge over Cache Creek, north of Esparto. Contract price, \$28,760.

Stockton, Cal.—To Ed. B. Blake, at \$14,800, for constructing concrete bridge over Mormon Channel at Sutter St.

Stockton, Cal.—By City Council contract for construction of Sutter St. bridge over Mormon Channel, to James Mulcahy, Atlanta, Ga. His bid was \$13,680.

Naugatuck, Conn.—Lowest bid received for new bridge over Long Meadow brook on Rubber Ave. was that of Altieri Bros., of Waterbury, at \$1,114.40.

Norwalk, Conn.—By Board of Selectmen, for construction of steel bridge at Cross St., to Berlin Construction Co., Berlin, Conn., at \$10,725.

Dakota City, Ia.—To Koob & Locke, city, at \$1,869, for construction of three concrete box culverts and Humboldt Cement Products Co., at \$578 for two culverts.

Lestershire, N. Y.—Contract for construction of new bridge to span Choconut Creek at westerly village limits has been awarded to Owego Concrete Co., of Owego, at \$4,437.

Delaware, O.—Lowest bid received for superstructure of Home bridge was from Bellefontine Bridge & Steel Co., at \$9,620.74, and for Mulzer bridge, Capital Construction Co., \$7,449.01.

Timn, O.—By County Commissioners to W. H. Hopple contracts for building abutments for Shubert bridge No. 18 in Seneca township at \$355, also for Queen bridge No. 22 in Big Spring township at \$356.

Urbana, O.—To Standard Engineering Co., of Toledo, contracts for reflooring of three bridges over Pennsylvania Railroad by County Commissioners. Total cost of reflooring will be \$2,800. Floors will be constructed of 4-in. creosoted planks covered with tar and sand.

St. Helen, Ore.—By State Highway Commission, for construction of one 156-ft. bridge and three 125-ft. bridges on the Nehalem Highway, Columbia County, to Ambrose-Burdsal Co., Portland, Ore., at \$25,000.

Butler, Pa.—Contract for construction of viaduct to connect the north and south sides of the city has been awarded to Fort Pitt Bridge Co., of Pittsburgh, and Fred M. Harper, of Butler, latter getting contract for substructure. The cost of

the structure complete will be \$124,414.96.

Kittanning, Pa.—For laying new creosote block floor on Kittanning bridge to Horsehead Construction Co., at \$12,500.

Philadelphia, Pa.—Following are lowest bidders for repairing and painting four city bridges: Market St. bridge, over Schuylkill River, D. W. Anders, 30th and Locust Sts., \$7,486; Girard Ave. bridge, C. P. Grim, West End Trust Building, \$5,900; Falls of Schuylkill bridge, American Paving & Construction Co., 211 S. 9th St., \$3,700, and bridge at Broad and Huntingdon Sts., American Paving & Construction Co., \$9,700.

Woonsocket, R. I.—Contract for foot bridge on street running from Sayles St. to Fairmount St. to Bouvier & Brien of Woonsocket, R. I.

Corpus Christi, Tex.—By Commissioners of Nueces County contracts Nos. 1 and 2 for construction of causeway across Nueces Bay to W. L. Pearson & Co., Houston, at \$88,290 and \$47,000 respectively.

Tacoma, Wash.—To Buckley & Bullis, of Buckley, contract to build approaches to Buckley bridge. They agreed to do the work for \$4,180.

Marshfield, Wis.—To Wausau Bridge Co., of Wausau, at \$4,468, for construction of bridge over Yellow River at Yagers by Lincoln and Rock Town Boards.

MISCELLANEOUS

Alameda, Cal.—The improvement clubs of Alameda are now opening campaign for passage of \$200,000 bond issue for improvement of Alameda's water front.

Berkeley, Cal.—Active steps to promote success of Berkeley bond campaign for \$1,750,000 for municipal improvements have been taken by City Council. Bonds will call for \$500,000 for schools, \$500,000 for harbor improvements and \$175,000 for civic center.

Alton, Ill.—Resolution has been adopted authorizing Fire and Police Committee to advertise for bids for purchase of one combination auto ambulance and police patrol. Also purchase of Lungmotor has been authorized. B. R. Kennedy is City Clerk.

Richmond, Ind.—Council has appropriated \$7,000 for crematory enlargement.

Richmond, Ind.—Fred Charles, City Engineer, will prepare plans for construction of addition to garbage crematory to cost \$10,000. Dr. S. G. Smelser is City Health Officer.

Muscatine, Ia.—Construction and operation of incinerating plant is being considered.

Lancaster, Ky.—Fiscal Court has ordered that proposition to issue bonds to amount of \$15,000 for repair of courthouse be submitted to voters of Garrard county at November election.

Omaha, Neb.—Commissioner A. C. Kugel, of Police Department, will introduce before City Council ordinance for submission to voters this fall of \$100,000 bond issue for purpose of building new city jail.

Manchester, N. H.—Resolution is being considered providing a \$100,000 bond issue for constructing city garbage crematory.

Newark, N. J.—Loan of \$185,000 has been made to city by George A. Halsey.

Trenton, N. J.—Resolution by Mayor Donnelly providing for engaging of Charles W. Leavitt, New York landscape engineer, to make preliminary survey of city at cost of about \$1,200, has been passed.

Schenectady, N. Y.—Bids will be advertised for 8,000 gallons of gasoline for garbage disposal plant.

Niles, O.—On Sept. 5 a special election will be held in city of Niles, at which voters will pass upon proposed bond issue to provide site for McKinley Memorial.

Portland, Ore.—Site will be purchased for proposed detention home for women.

Philadelphia, Pa.—Municipal loan of upward of \$15,000,000 is being considered for municipal improvements.

Pottsville, Pa.—City Commissioners will provide for garbage system.

Providence, R. I.—Board of Contract and Supply has asked for bids for filling in and levelling area between new

city sea wall at Field's Point and mainland in the rear. Engineers estimate that approximately 350,000 cu. yds. of material will be necessary to complete the filling.

Providence, R. I.—Plans are being discussed for new police station.

Dallas, Tex.—Building of Municipal Market is planned.

Galveston, Tex.—Steps have been taken toward securing property lying between auditorium and Seawall boulevard and 27th and 28th Sts. for park purposes.

Laredo, Tex.—Bonds in sum of \$8,000 have been voted for improvement of Jarvis Plaza.

CONTRACTS AWARDED.

San Francisco, Cal.—For constructing Municipal Railway through Stockton street tunnel by Board of Works to Eaton & Smith for \$9,775. This part of road extends from Sutter to Sacramento St.

New Castle, Del.—By City Council, contract for building concrete wharf at foot of Delaware St., to Cloud, Stiles & Work, of Chester, at \$4,985.

Waukegan, Ill.—By City Council for furnishing combination police patrol and ambulance to Thomas P. Jeffrey Co., of Kenosha, at \$3,200.

Newark, N. J.—Bids for dredging additional width of 200 ft. in Newark Bay, opposite area of meadow now being developed and parallel to present channel for distance of about 1¼ miles have been received by Board of Works. The Atlantic Gulf & Pacific Co. put in lowest figure, \$421,451.53. Contract for building dock on bay front at mouth of Peddie ditch was awarded to O'Gara & Maguire, Inc., 127 Frelinghuysen Ave., Newark, at its bid price of \$449,397.75. To O'Gara & Maguire, Inc., was also awarded contract for constructing hull for steam dredge at \$2,430.

Trenton, N. J.—The Robert W. Smith Corporation has been awarded contract for laying out and improving Stacy Park, between waste weir and log basin. Work will cost about \$9,000.

Dunkirk, N. Y.—By board of police and fire commissioners to Mulholland Company of Dunkirk for new automobile at \$6,500.

Grand Forks, N. D.—To C. A. Overson, International Falls, Minn., for installation of garbage incinerator.

Columbus, O.—By Franklin Park Commission, contract for construction of new shelter and recreation house in Franklin Park, to Adam Pitts, on his bid of \$22,505.

Steubenville, O.—To Guy Johnson & Co. contract for new city market house at bid of \$34,886.

Portland, Ore.—For supplying city 15,000 barrels of fuel oil to Standard Oil Co. & Union Oil Co. at 90 cts. per barrel. One-half of contract was given above firms.

Harrisburg, Pa.—State Highway Commissioner Bigelow for automobile license plates to be used during next year to the Brilliant Mfg. Co., 1035 Ridge St., Philadelphia. Bids were also received from New York Metal Ceiling Co., New York City; Sanitary Enameling & Specialty Co., New Kensington, Pa.; Quayle Enameling Co., Albany, N. Y.; Western Badge & Novelty Co., of St. Paul, Minn. Contract was also awarded for drivers' badges for 1915 to Wm. S. Tunis, of Harrisburg, at 3.4 cts. apiece. Other bidders were: A. C. Gibson Co., Buffalo, N. Y.; Fannier Brothers' Stamp Co., Pittsburgh, Pa.; James H. Matthews & Co., Pittsburgh, and Dieges & Clust, Philadelphia.

Philadelphia, Pa.—To George B. Klopp, of Philadelphia, for three metal stairways for Philadelphia General Hospital at \$5,390.

San Antonio, Tex.—County Commissioners have ordered purchase of seven-passenger automobile for use of Commissioners' Court. Car will be bought from Alamo Auto Sales Co. on its bid of \$1,050, and is to be a 40 horse-power machine.

Norfolk, Va.—By Board of Control to S. E. Morriss Co., contract for 900 barrels of Portland cement at \$1.50 per barrel.

TOO LATE FOR CLASSIFICATION

BIDS ASKED FOR

STATE	CITY	REC'D UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREETS AND ROADS				
Minn.	Winona	.....4 p.m., Sept. 14.	Grading and filling on highway.....	C. W. Anding, Co. Aud.
Minn.	St. Paul	.....10 a.m., Sept. 14.	Curbing and boulevarding; also grading.....	A. Hohenstein, Pur. Agt.
N. Y.	Niagara Falls	7.30 p.m., Sept. 15.	Constructing about 100,000 sq. yds. sidewalk, and about 2,700 ft. of pavement and about 100 ft. of curb.....	T. H. Hogan, City Clk.
Ind.	Madison	.....10 a.m., Sept. 15.	Grading, draining and paving one road, cost \$6,290.....	A. M. Taft, Co. Aud.
Ill.	Champaign	.....About Sept. 15.	11,000 sq. yds. brick paving, 7,400 ft. concrete curb and gutter, cost about \$30,000.....	L. Sizer, Engineer.
N. J.	Cranford	.....8.30 p.m., Sept. 16.	1,110 sq. yds. waterbound macadam.....	D. Mosher, Twp. Engr.
Kan.	Marion	.....Sept. 16.	About 2,000 yds. brick paving and 2,000 ft. concrete curb and gutter.....	R. A. Rowland, Co. Engr.
Tex.	Temple	.....10 a.m., Sept. 17.	Constructing about eight miles road, materials considered being gravel, Portland cement concrete, asphaltic concrete and brick. Curb and gutter to be constructed of concrete.....	W. E. Hall, Co. Aud.
O.	Marysville	.....1 p.m., Sept. 19.	5.36 miles gravel road.....	C. A. Morleck, Co. Aud.
N. J.	Haledon	.....8 p.m., Sept. 21.	Constructing curb and gutter.....	J. E. Stewart, Boro. Clk.
Minn.	Alexandria	.....7.30 p.m., Sept. 21.	Building and improving state road, two sections.....	C. J. Sundblad, City Clk.
O.	Cleveland Heights	.....Noon, Sept. 21.	Sidewalk on one street.....	H. Canfield, Vil. Clk.
O.	Martins Ferry	.....Noon, Sept. 24.	Paving three streets with vitrified brick.....	B. Brown, Dir. Pub. Ser.
SEWERAGE				
Ill.	Charleston	.....About Sept. 12.	1,200 ft. 10-inch. vitrified pipe sewer in one street.....	J. H. Tremble, Engr.
Neb.	Lincoln	.....2 p.m., Sept. 12.	Constructing sewer, to cost \$600.....	City Engineer.
N. Y.	Niagara Falls	7.30 p.m., Sept. 15.	Constructing sewer and appurtenances in two streets.....	F. S. Parkhurst Jr, C. E.
Ill.	Dixon	.....About Sept. 15.	Constructing about 4,700 ft. of sanitary sewer, ranging from 6 to 12-inch.....	City Engineer.
Minn.	Eveleth	.....8 p.m., Sept. 15.	1,150 ft. storm sewer ditch.....	A. P. Romer, City Clk.
Neb.	Grand Island	.....8 p.m., Sept. 16.	Constructing drains to cost \$1,331.....	H. E. Clifford, City Clk.
Wis.	Beloit	.....2 p.m., Sept. 18.	Constructing about 7,323 ft. 8-in. sewer, 15 manholes and 10 flush tanks.....	Board Public Works.
Ind.	La Porte	.....9 a.m., Sept. 19.	Constructing about 3,750 ft. district sewer, together with catch basins, etc.....	W. F. Krueger, City Clk.
La.	New Orleans	.....Noon, Oct. 2.	Making extensions to drainage station.....	F. S. Shields, Sec. Sew. & Water Board.
La.	New Orleans	.....Noon, Nov. 14.	Sewer extensions, water extensions, connections to sewers and water mains, etc.....	F. S. Shields, Sec. Sew. & Water Board.
WATER SUPPLY				
Minn.	Cuyuna	.....8 p.m., Sept. 14.	Installing 3 additional wells and pumping connections.....	G. F. Anderson, Vil. Clk.
LIGHTING AND POWER.				
N. J.	Passaic	.....Sept. 21.	Lighting streets for five years.....	Z. A. Van Houten, City Clk.
FIRE EQUIPMENT				
Ind.	Wabash	.....Sept. 14.	Motor combination chemical and hose wagon.....	City Clerk.
Minn.	Hookins	.....Sept. 15.	500 ft. of hose, one hand hose cart, two play pipes.....	E. A. Close, Vil. Rec.
N. J.	East Orange	.....Sept. 15.	Furnishing motor combination chemical and hose.....	Board Fire Comrs.
BRIDGES				
Pa.	Oakville	.....Sept. 15.	Erecting two concrete bridges.....	Twp. Supv.

STREETS AND ROADS

Tucson, Ariz.—Following bids have been received for Pennington St. paving (a) Arizona Asphalt Co., (b) California Const. Co.: 8,802 sq. yds. bitulithic paving, (a) \$2.19½, (b) \$2.18 per sq. yd.; 3,646 lin. ft. concrete curb, (a) 55 cts., (b) 60 cts. per lin. ft.; 9,709 sq. ft. sidewalks, (a) 15 cts., (b) 15½ cts. per sq. ft.; extras, (a) \$150, (b) \$300. Contract has not yet been awarded.

Oroville, Cal.—State Highway Commissioners have decided upon route for Oroville lateral from main trunk highway from point near Richvale. Lateral will be 9 miles in length and will run almost directly east from Richvale to Oroville.

San Francisco, Cal.—Appropriation of \$60,000 for street repair work in September has been allowed.

Pueblo, Colo.—An auto street sprinkler is to be purchased immediately by the City Commissioners.

Shelbyville, Ind.—Twenty road improvement bonds, of total face value of \$2,660, at 4½ per cent interest, have been sold to Charles McDaniel and William Fox, of Blue Ridge, this county.

Belvidere, N. J.—Board of Freeholders has ordered County Engineer F. W. Salmon to make survey of proposed new macadam road leading from Blairstown to Lackawanna station.

Illon, N. Y.—Board of Village Trustees has sent to State Highway Commission final plans and resolution for paving of Otsego St. State Commissioner of Highways Carlisle promises to advertise and let bids for road this winter.

Cincinnati, O.—County Commissioners have referred petition for improvement of Pippin road from Compton to Van Zandt roads to Surveyor Cowen for estimate of cost; also petition for improvement of North Bend road east of Burnt School House.

Columbus, O.—Bids will be received until 10 a. m., Sept. 22, by Board of County Commissioners of Franklin County for purchase of following road improvement bonds: State Street Worthington Road Improvement bonds in sum of \$20,000; East Fifth Avenue in sum of \$7,500; Georgesville Road in sum of \$30,000. John Scott is Clerk of Board.

Mansfield, O.—Ordinance has been passed providing for issue of general street improvement bonds to pay city's share of cost of improving sundry streets, by constructing sidewalks and crosswalks and repairing sidewalks on city property. W. W. Carter, Clerk of Council.

Eugene, Ore.—Ordinance has been passed to pave Sixth Ave. West between Olive St. and Blair Blvd.

Chester, Pa.—Paving of about 12 more streets this year is being planned.

Punxsutawney, Pa.—Borough Solicitor has been instructed to draw up ordinance providing for paving of Pike St. from bridge to P. R. R. tracks, according to engineer's plans for same.

South Bethlehem, Pa.—Ordinance providing for appropriation of \$3,600 for resurfacing and repair of paved streets has passed final reading.

Sioux Falls, S. D.—Road grader will be purchased.

Austin, Tex.—The Attorney General's Department has approved \$125,000 bond issue of Collin County Road District No. 7, 40-20s, 5 per cent, and \$15,000 of a \$450,000 issue of Collin County Road District No. 4, 40-10s, 5 per cent.

Dallas, Tex.—Additional street paving, to cost \$150,000, is planned.

Temple, Tex.—Petition is being considered by Bell County Commissioners to have \$200,000 out of bond money in Road District No. 5 set aside for improvement of streets within incorporated limits of Temple.

Watertown, Wis.—Resolution has been adopted for improving of Eighth St. from Main St. to Western Ave. by paving. F. S. Weber is City Clerk.

Niagara Falls, Ont., Can.—The Fort Erie Council has accepted proposition of Park Commissioners to extend boulevard through to Fort Erie ferry dock.

Milan, Italy.—The Road Improvement Company, via Monte Napoleone 14, Milan, would like to receive data on engines and materials employed in highway work. Better organization of road construction and maintenance is contemplated.

CONTRACTS AWARDED.

Tucson, Ariz.—For Pennington St. paving to Arizona Asphalt Co. by City Council for sum of \$22,932.05. Other bid was that of California Const. Co. and was for \$23,156.58. Detailed figures of successful bidder are as follows: 8,802 sq. yds. bitulithic at \$2.195 a sq. yd., \$19,320.39; 3,646 lin. ft. curb, at 55 cts. a lin. ft., \$2,005.30; 9,709 sq. ft. sidewalk, at 15 cts. a sq. ft., \$1,456.35; miscellaneous, \$150; total, \$22,932.04.

Sacramento, Cal.—Lowest bids received by California Highway Commission for following highways are as follows: Sacramento Co., Div. III, Route 2, Section A, Joe Lawrence, Broderick, at \$41,498; Los Angeles Co., Div. VII, Route A, Section B, Marsh Bros. & Gardenier, Inc., San Francisco, \$120,437; Santa Barbara Co., Div. V, Route 2, Sections G and I, Brashear-Burns Co., Los Angeles, \$89,466.90; Santa Barbara Co., Div. V, Route 2, Section A, Rogers Bros. Co., Los Angeles, \$19,523.

Miami, Fla.—For paving with asphaltic concrete as follows: To Southern Asphaltic Const. Co., Birmingham, Ala., 33,000 sq. yds., at \$1.09 per sq. yd., and F. G. Proudfoot, for 33,000 sq. yds. B. H. Klyce, City Engineer.